Crusader
ENGINES



MARINE

ILLUSTRATED

PARTS MANUAL

MODEL 5.7L Carburetor

Classic Series

1999 - 2005 MY

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Contents:

HOW TO READ THIS PARTS BOOK:

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RB001005I	**Base Engine Assembly**, 5.7L	1
(1)	(2)	(3)	(4)

(1) ITEM NUMBER - This number corresponds with the number in the exploded view on the facing page.

(2) PART NUMBER - This is the designated part number for the particular component or assembly.

(3) DESCRIPTION - This identifies what the component or assembly is.

(4) QUANTITY - This refers to the number of pieces used.

Symbols shown throughout parts list are defined here or on the bottom of the individual parts list page.

AR	=	As Required
OPT	=	Optional
NSS	=	Not Serviced Separately
NA	=	Not Available
SS	=	Single Station Control
DS	=	Dual Station Control
OS	=	Oversize
US	=	Undersize
TBD	=	To Be Determined
NI	=	Not Illustrated

"TYPICAL VIEWS ARE SHOWN"

ENGINE ROTATION

Engine Rotation is identified as "RH" or "LH" with the engine model number. Rotation always is determined from the flywheel end looking toward the front of the engine. In some instances, propeller shaft rotation may be opposite to that of the engine.

When ordering a replacement engine, production block or parts for the engine, be certain to check engine rotation. **DO NOT rely on propeller rotation in order to determine engine rotation.**

LEFT-HAND ROTATION is STANDARD ROTATION.

(Flywheel turns counterclockwise when viewed from flywheel end of the engine.)

RIGHT-HAND ROTATION is OPPOSITE ROTATION.

(Flywheel turns clockwise when viewed from flywheel end of the engine.)

REPLACEMENT PARTS:

WARNING:

Electrical, ignition and fuel system components on Crusader Engines are designed and manufactured to comply with U.S. Coast Guard rules and regulations to minimize risks of fire or explosion.

Use of replacement electrical, ignition and fuel system components which do not comply with these rules and regulations could result in a fire or explosion hazard and should be avoided.

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MAINTENANCE ITEM PART NUMBERS:

Description	Part Number
Oil Filter	22679
Kit, Transmission Oil Filter (ZF)	RP077011
Spark Plugs	RP030010
Spark Plug Wire Set	97454
Alternator Drive Belt (Thru ‘03)	96307
Raw Water Pump Drive Belt (Thru ‘03)	97178
Serpentine Drive Belt (‘04) (LH)	R066028
Serpentine Drive Belt (‘04) (RH)	R066029
Impeller Kit (Belt or Crank Driven Raw Water Pump)	RP061017
Impeller Kit (Serpentine Raw Water Pump)	RP061022
Thermostat (Raw Water Cooling)	R026002
Thermostat (Fresh Water Cooling)	R026007

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CHANGE NOTICE:

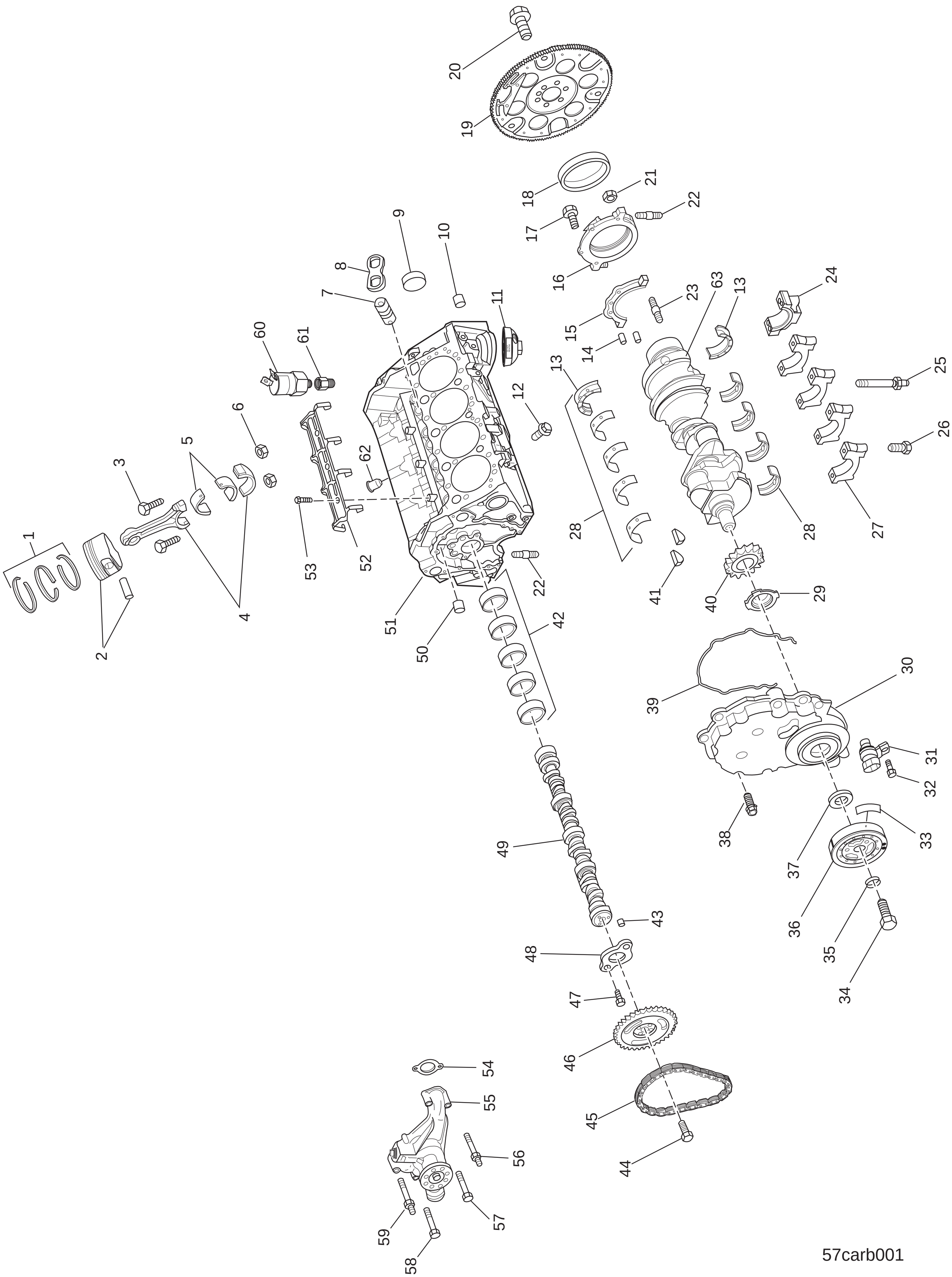
Change Pages	Date Updated
revised	01/07
50-51, 67	06/07

MARINE TRANSMISSIONS:

Crusader Engines are equipped with Velvet Drive or Hurth Transmissions, or “V”-drives. If transmission parts are required, contact your dealer or closest Crusader Parts Distributor for required parts.

Parts manuals and overhaul manuals are available through Crusader Distributors.

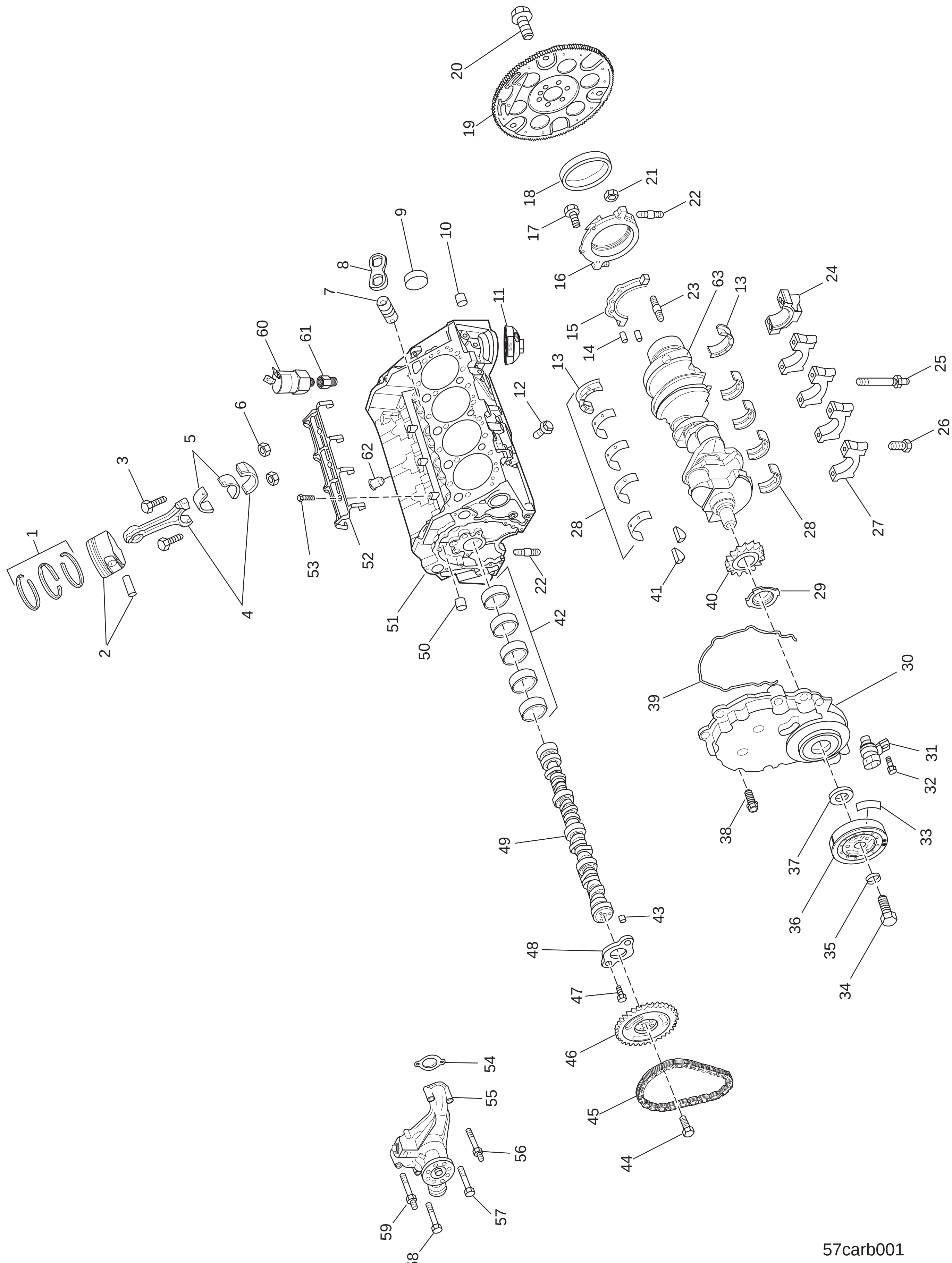
CYLINDER BLOCK ASSEMBLY - FIGURE 1



CYLINDER BLOCK ASSEMBLY - FIGURE 1

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
*	RB001005H	**Base Engine Assembly (LH)**	
*	RB001005A	**Base Engine Assembly (RH)**	
1	R015013	**Ring Set**, piston (STD)	8
2	RA013016	**Piston**, (STD)	8
3	7080280	**Bolt**, connecting rod cap	16
4	RA011012	**Connecting Rod** (STD)	8
5	R007023	**Bearing Set**, connecting rod (STD)	8
6	7080050	**Nut**, connecting rod cap	16
7	R035038	**Lifter**, roller, valve	16
8	R037001	**Guide**, valve lifter	8
9	R069064	**Plug**, camshaft	1
10	33089	**Plug**, oil gallery	3
11	R079051	**Adapter**, oil bypass 5.7L	1
12	RS3552	**Plug**, engine block coolant drain hole	2
13	7050680	**Bearing**, crankshaft rear main (STD)	1
13	7057200	**Bearing**, crankshaft rear main (.001 US)	AR
13	7057220	**Bearing**, crankshaft rear main (.010 US)	AR
13	7057230	**Bearing**, crankshaft rear main (.020 US)	AR
14	7070340	**Pin**, crankshaft rear oil seal housing alignment	1
15	7070370	**Gasket**, crankshaft rear oil seal housing	1
16	R134070	**Housing**, crankshaft rear oil seal	1
17	7057250	**Bolt**, crankshaft rear oil seal housing, short	2
17	7057260	**Bolt**, crankshaft rear oil seal housing, long	1
18	R047173A	**Seal**, crankshaft rear oil (LH)	1
18	R047175	**Seal**, crankshaft rear oil (RH)	1
19	RA138008	**Flywheel Assembly** (Top Mount Starter)	1
19	RA138010	**Flywheel Assembly** (Bottom Mount Starter)	AR
20	7070480	**Bolt**, flywheel attaching	6
21	7057270	**Nut**, crankshaft rear oil seal housing	2
22	TBD	**Stud**, crankshaft rear oil seal housing	4
23	7050700	**Stud**, crankshaft rear oil seal housing	2
24	NSS	**Cap**, crankshaft bearing #5	1
25	7050870	**Stud**, crankshaft bearing cap	5
26	7050690	**Bolt**, crankshaft bearing cap	5
27	NSS	**Cap**, crankshaft bearing #1 - #4	4
28	RK007020	**Bearing Set**, crankshaft main (STD)	1
28	7050670	**Bearing**, crankshaft main (STD)	4
28	7057170	**Bearing**, crankshaft main (.002 US)	AR
28	7057180	**Bearing**, crankshaft main (.010 US)	AR
28	7057190	**Bearing**, crankshaft main (.020 US)	AR
29	R056001	**Ring**, crankshaft position sensor reluctor (LH)	1
29	R056001A	**Ring**, crankshaft position sensor reluctor (RH)	1

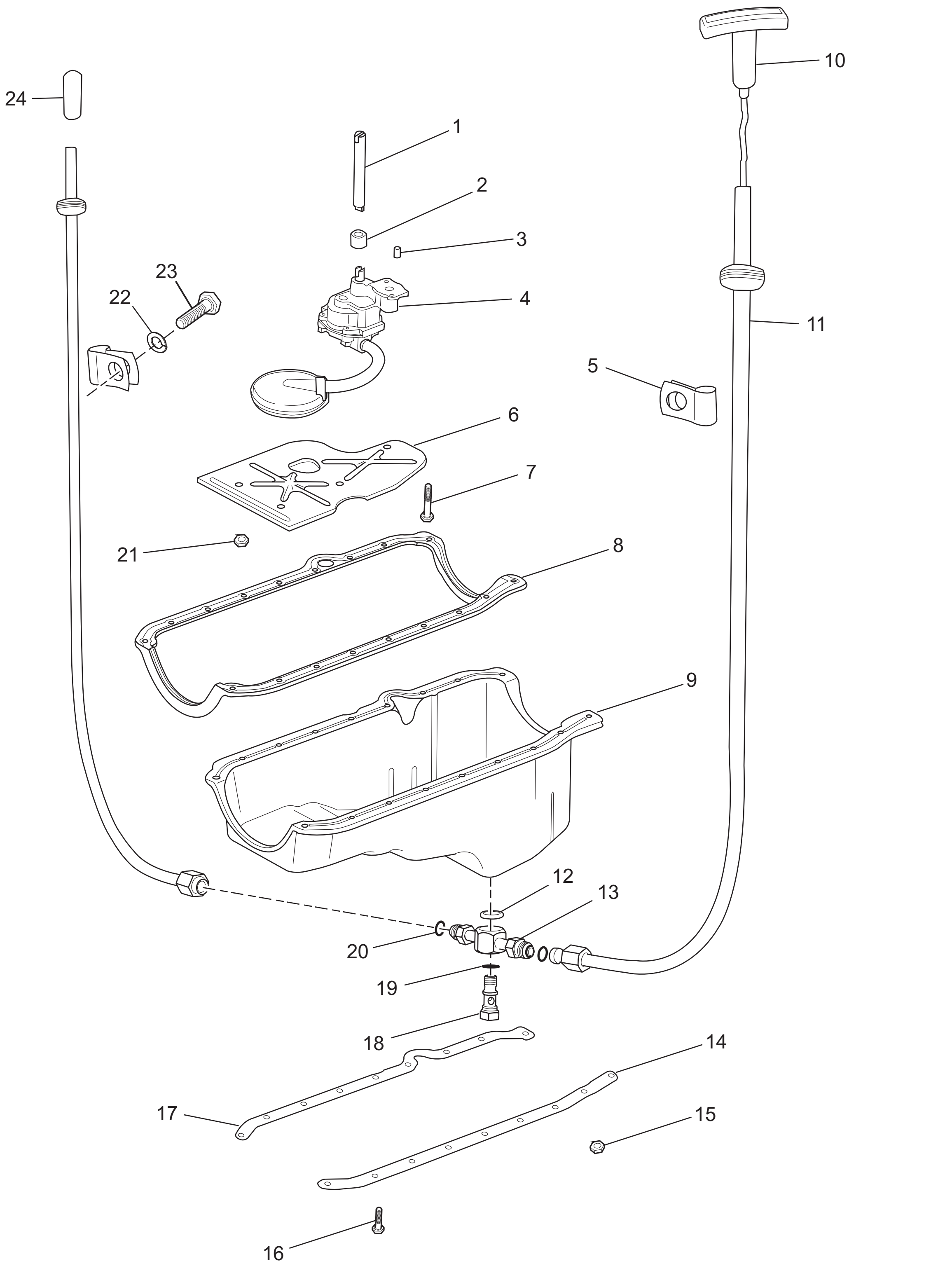
CYLINDER BLOCK ASSEMBLY - FIGURE 1 (cont'd)



CYLINDER BLOCK ASSEMBLY - FIGURE 1 (cont'd)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
30	R004010A	**Cover**, engine front cover (includes gasket and seal) '02 - present engines	1
30	R004010	**Cover**, engine front cover (includes gasket and seal) '97 - '01 engines	1
31	R020038	**Sensor**, crankshaft position	1
32	TBD	**Bolt**, crankshaft position sensor attaching	1
33	R143151	**Decal**, ignition timing	1
34	R009091	**Bolt**, crankshaft balancer	1
35	R096074	**Washer**, crankshaft balancer bolt	1
36	R064010A	**Balancer**, crankshaft - '02 and newer	1
36	R064010	**Balancer**, crankshaft - '97-'01	1
37	NSS	**Seal**, crankshaft front oil	1
38	R009177	**Bolt**, engine front cover attaching, short	6
38	R009176	**Bolt**, engine front cover attaching, long	2
39	NSS	**Gasket**, engine front cover	1
40	R054024	**Sprocket**, crankshaft	1
41	R164024	**Key**, crankshaft balancer	2
42	RK051030	**Bearing Set**, camshaft	1
42	7050630	**Cam Bearing #1**	1
42	7050640	**Cam Bearing #2 & #5**	2
42	7050650	**Cam Bearing #3 & #4**	2
43	R022022	**Pin,** camshaft sprocket locating	1
44	30698	**Bolt**, camshaft sprocket attaching	1
45	R055011	**Chain**, camshaft timing	1
46	R054041	**Sprocket**, camshaft	1
47	7070700	**Bolt**, camshaft retaining	2
48	R109050	**Retainer**, camshaft	1
49	RA050021	**Camshaft**, engine **(LH)**	1
49	RA050022	**Camshaft**, engine **(RH)**	1
50	7050740	**Plug**, oil gallery	1
51	NSS	**Block**, engine	
52	R090253A	**Retainer**, valve lifter	1
53	RS0279	**Bolt**, valve lifter retainer	3
54	RM0203	**Gasket**, water pump to engine block	2
55	RA057027	**Water Pump Assembly**	1
56	R095026	**Stud**, water pump attaching	1
57	RS0307	**Bolt**, water pump attaching	1
58	90305275	**Bolt**, water pump attaching	1
58	90305300	**Bolt**, water pump attaching	1
59	R095026	**Stud**, water pump attaching	1
59	RS0308	**Bolt**, water pump attaching	1
NI	RS2180	**Lockwasher**, water pump attaching	2
60	R153005	**Switch**, oil pressure, fuel interlock	1
61	R024059	**Fitting**, oil switch	1
62	98144	**Plug**, block, dipstick (305/350)	1
63	R006017A	**Crankshaft**, 350 1996/Later	1
NI	R069066	**Plug**, Brass, block 1 5/8"	8

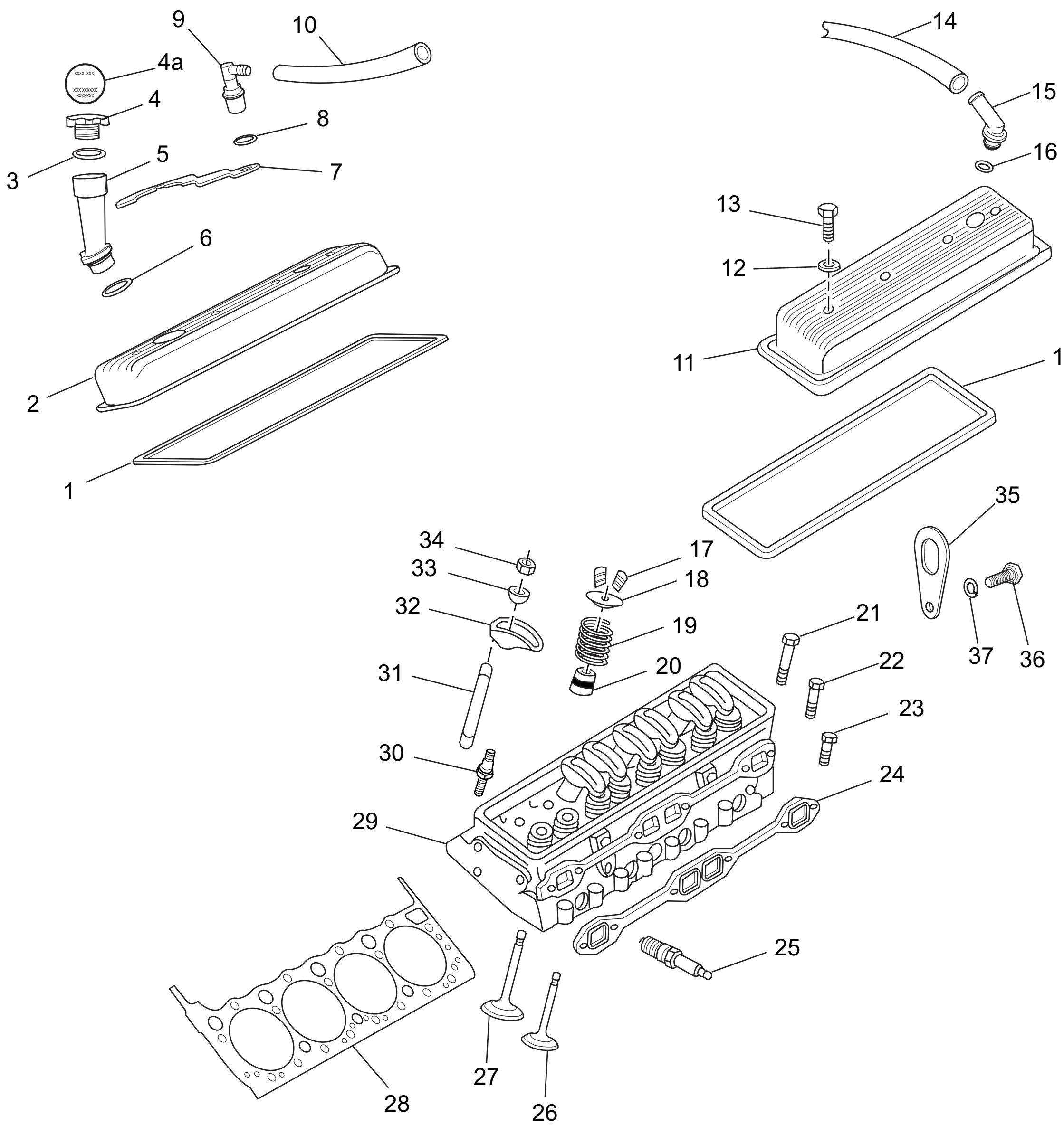
OIL PAN and OIL PUMP ASSEMBLY - FIGURE 2

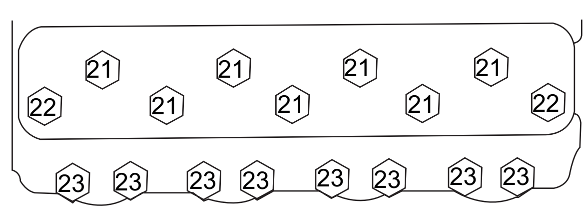


OIL PAN and OIL PUMP ASSEMBLY - FIGURE 2

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R058054	**Shaft**, oil pump drive	1
2	7100220	**Retainer**, oil pump drive shaft	1
3	R022022	**Pin**, oil pump locating	2
4	RA070010	**Oil Pump Assembly**	1
5	R127015	**Clamp**, strap	2
6	R012028	**Deflector**, crankshaft oil	1
7	7100250	**Bolt**, oil pump	1
8	RM0249	**Gasket**, oil pan	1
9	R005011	**Oil Pan**, stamped	1
9	97920	**Oil Pan**, cast (not shown)	1
10	R041073	**Dipstick**, oil level (0-4 degree)	1
10	R041074	**Dipstick**, oil level (12 degree)	AR
10	R041075	**Dipstick**, oil level (V-drive)	AR
11	R041078	**Tube**, oil level dipstick	2
12	23535	**O-ring**, oil pan dipstick tube fitting	1
13	98432	**Fitting**, oil pan dipstick tube	1
14	7090440	**Reinforcement**, oil pan (LH)	1
15	95200010	**Nut**, oil pan	4
16	R009157	**Bolt**, oil pan	14
17	7090450	**Reinforcement**, oil pan (RH)	1
18	98466	**Bolt**, oil pan dipstick tube fitting	1
19	NSS	**O-ring**, oil pan dipstick tube fitting bolt	1
20	NSS	**O-ring**, oil pan dipstick tube	2
21	7050360	**Nut**, crankshaft oil deflector	5
22	RS2180	**Lockwasher**, strap clamp	2
23	RS0302	**Bolt**, strap clamp	2
24	45343	**Cap**, oil pan dipstick tube	1
		“CAST OIL PAN”	
NI	RS3551	**Pipe Plug**, HX SOC Brass 3/8”, port and frt	2
NI	30615	**Fitting**, oil pan dipstick tube, 45º, brass, stbd	1
NI	98350	**Tube**, dipstick, 0º	AR
NI	98351	**Tube**, dipstick, 4º	AR
NI	98352	**Tube**, dipstick, 12º	AR
NI	98283	**Dipstick**, oil level	1
NI	90245200	**Bolt**, oil pan, 5/16-18 X 2”, front	2
NI	90245150	**Bolt**, oil pan, 5/16-18 X 1-1/2”, rear	2
NI	RS2179	**Lockwasher**, oil pan, 5/16”	4
NI	90105175	**Bolt**, oil pan, 1/4-20 X 1-3/4”, port front	4
NI	RS0258	**Bolt**, oil pan, 1/4-20 X 1-1/2”, stbd, port rear	8
NI	RS2178	**Lockwasher**, oil pan, 1/4”	12

CYLINDER HEAD ASSEMBLY - FIGURE 3





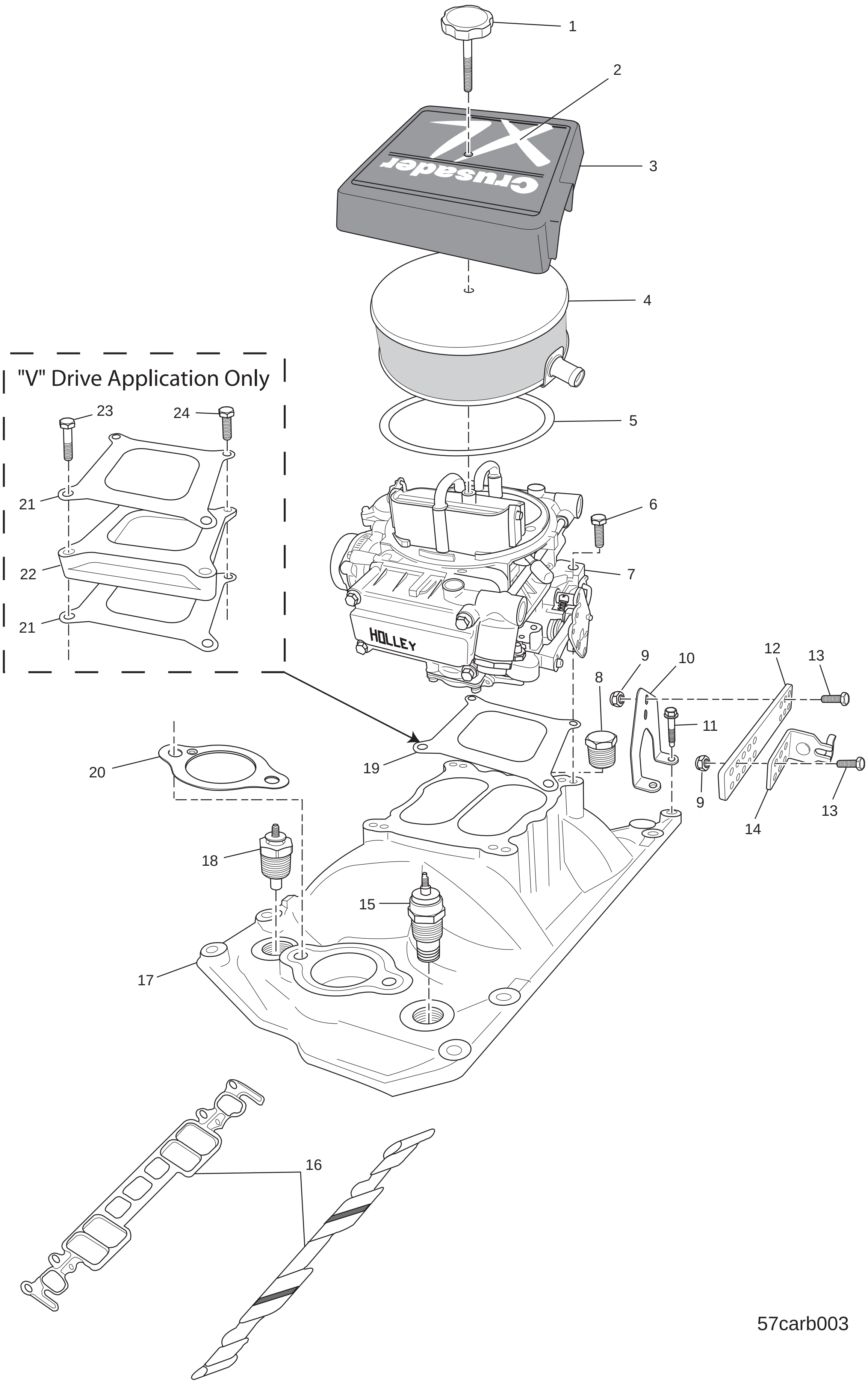
CYLINDER HEAD
BOLT POSITION

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CYLINDER HEAD ASSEMBLY - FIGURE 3

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RM0193	**Gasket**, rocker cover	2
2	R033008	**Cover**, rocker (right side)	1
3	R047228	**O-Ring**, oil fill riser cap	1
4	R034037	**Cap**, oil fill riser	1
4a	R143137	**Decal**, oil fill riser cap	1
5	R034048	**Riser**, oil fill	1
6	R047228	**O-Ring**, oil fill riser	1
7	R127098	**Retainer**, oil fill riser	1
8	R094015	**Grommet**, pcv valve	1
9	R035015	**Valve**, positive crankcase ventilation	1
10	R045049	**Hose**, pcv valve 3/8” I.D.	AR
11	R033008A	**Cover**, rocker (left side)	1
12	98009	**Washer**, rocker cover retaining bolt	8
13	7231510	**Bolt**, rocker cover retaining	8
14	R045008C	**Hose**, breather	1
15	R024013A	**Elbow**, breather tube	1
16	R094015	**Grommet**, breather tube elbow	1
17	R049012	**Retainer**, valve stem	32
18	R049015	**Cap**, valve spring	16
19	R046050	**Valve Spring Assembly**	16
20	R047238	**Seal**, valve stem (intake)	8
20	R047239	**Seal**, valve stem (exhaust)	8
21	R009168	**Bolt**, cylinder head to engine block (long)	14
22	7057300	**Bolt**, cylinder head to engine block (medium)	4
23	7057280	**Bolt**, cylinder head to engine block (short)	16
24	96306	**Gasket**, exhaust manifold	2
25	R030010	**Spark Plug**	8
26	R043035	**Valve**, (intake)	8
27	R043036	**Valve**, (exhaust)	8
28	RM0195	**Gasket**, cylinder head	2
29	R003008B	**Cylinder Head Assembly**	2
30	R095034	**Stud**, valve rocker arm	16
30	7230920	**Stud**, valve rocker arm (.013 OS)	AR
30	R095035	**Stud**, valve rocker arm (.033 OS)	AR
31	R039023	**Push Rod**	16
32	R038015	**Rocker Arm**, valve	16
33	R038011	**Ball**, rocker arm	16
34	R017069	**Nut**, rocker arm attaching	16
35	R042008	**Bracket**, lift ring	1
36	RS0304	**Bolt**, lift ring attaching	1
37	RS2180	**Lockwasher**, lift ring attaching	1

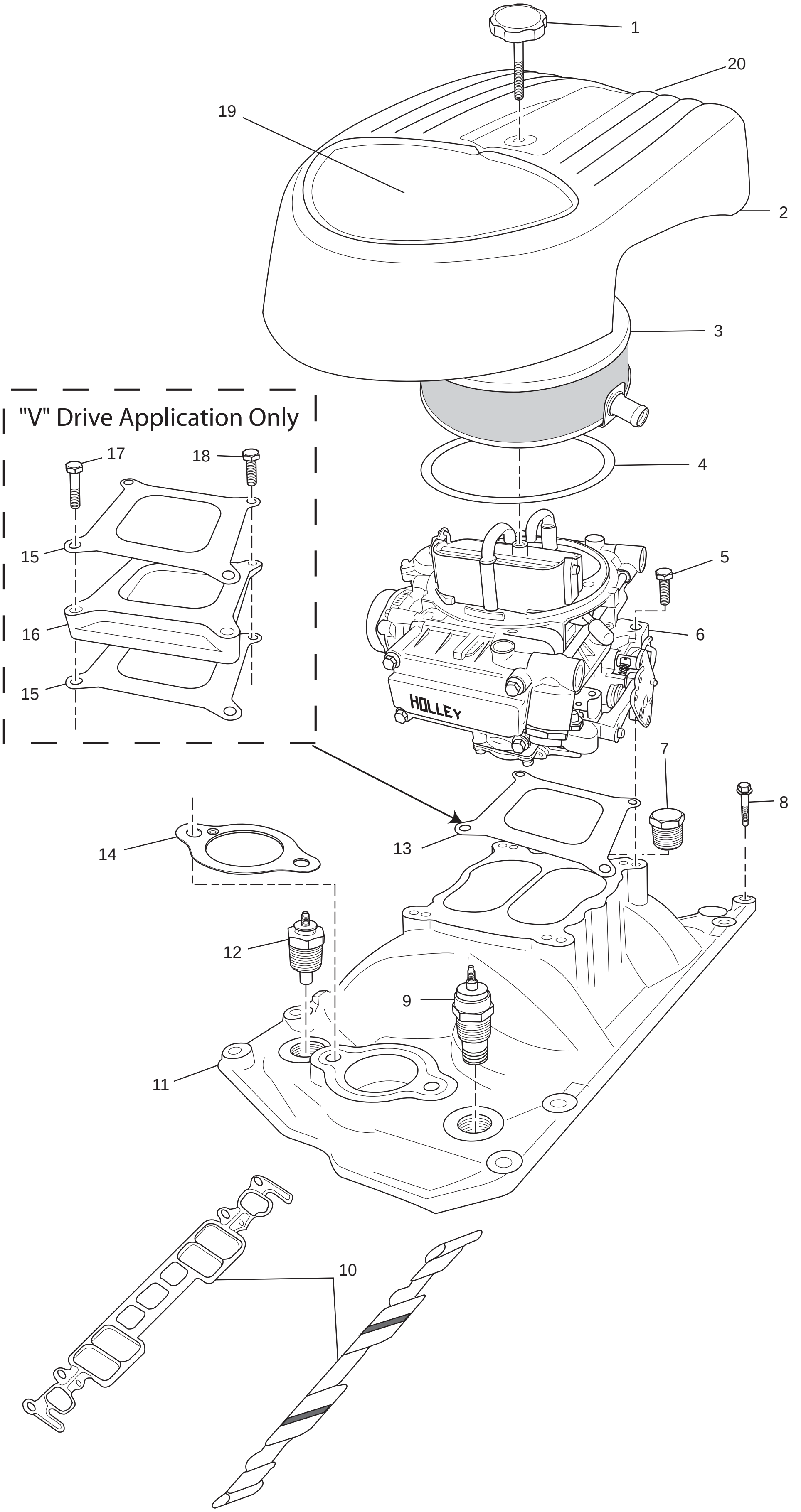
INTAKE MANIFOLD ASSEMBLY (Thru ‘03) - FIGURE 4



INTAKE MANIFOLD ASSEMBLY (Thru '03) - FIGURE 4

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RA009145	**Knob**, cover retaining	1
2	22831	**Decal**, cover "Crusader XL"	1
3	R060045	**Cover**, flame arrestor	1
4	R145017	**Arrestor**, flame	1
5	RM0129	**Gasket**, flame arrestor (4V)	1
6	RS0282	**Bolt**, carburetor attaching	4
7	RA052003	**Carburetor**, Holley	1
8	RS3551	**Plug**, intake manifold	1
9	RS2055	**Nut**, nylock, throttle clip attaching	4
10	98582	**Bracket**, throttle cable	1
11	R009180	**Bolt,** intake manifold to block	8
12	R090193	**Bracket**, throttle clip extension	1
13	RS5122	**Bolt**, throttle clip attaching	2
14	R090086	**Clip**, throttle cable attaching	1
15	R020014A	**Switch**, engine coolant temperature	1
16	RM0250	**Gasket**, intake manifold	2
17	R002018C	**Intake Manifold**	1
18	R020003	**Sender**, temperature (SS)	1
18	22701	**Sender**, temperature (DS)	AR
19	98088	**Gasket**, carburetor to intake manifold	1
20	RM0121	**Gasket**, water neck	1
		Carburetor mounting components for V-drive applications.	
21	98088	**Gasket**, carburetor mounting	2
22	98087	**Wedge**	1
23	90205200	**Bolt**, carburetor mounting, front	2
24	90205125	**Bolt**, carburetor mounting, rear	2

INTAKE MANIFOLD ASSEMBLY (‘04) - FIGURE 5

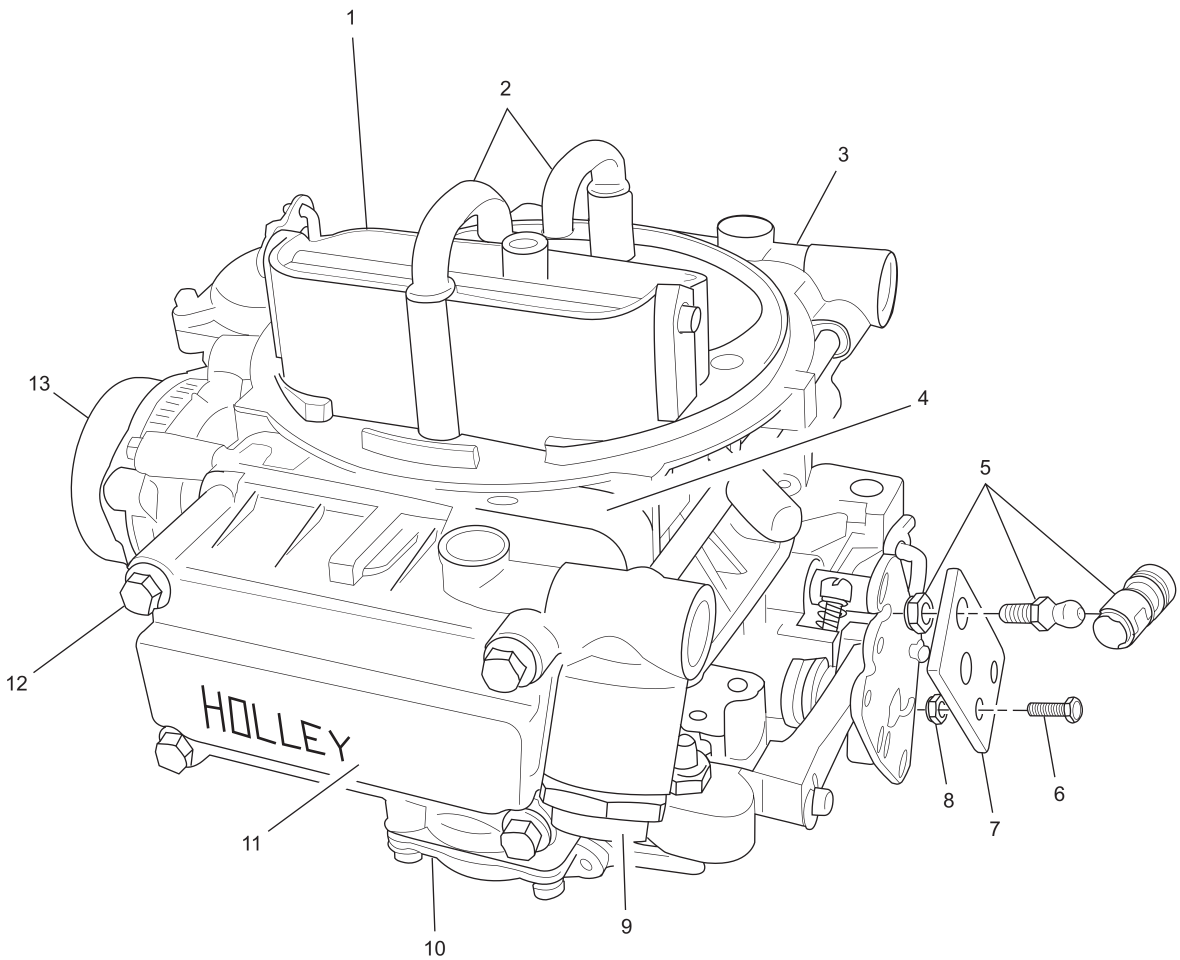


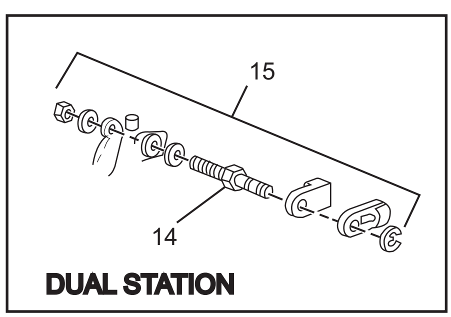
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INTAKE MANIFOLD ASSEMBLY ('04) - FIGURE 5

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RA009145	**Knob**, cover retaining	1
2	R060056	**Cover**, flame arrestor	1
3	R145017	**Arrestor**, flame	1
4	RM0129	**Gasket**, flame arrestor (4V)	1
5	RS0282	**Bolt**, carburetor attaching	4
6	RA052003	**Carburetor**, Holley	1
7	RS3557	**Plug**, intake manifold	1
8	R009180	**Bolt,** intake manifold to block	8
9	R020014A	**Switch**, engine coolant temperature	1
10	RM0250	**Gasket**, intake manifold	2
11	R002018C	**Intake Manifold**	1
12	R020003	**Sender**, temperature (SS)	1
12	22701	**Sender**, temperature (DS)	AR
13	98088	**Gasket**, carburetor to intake manifold	1
14	RM0121	**Gasket**, water neck	1
		Carburetor mounting components for V-drive applications.	
15	98088	**Gasket**, carburetor mounting	2
16	98087	**Wedge**	1
17	90205200	**Bolt**, carburetor mounting, front	2
18	90205125	**Bolt**, carburetor mounting, rear	2
19	R143126B	**Decal**, cover	1
20	R143127B	**Decal**, cover	1

CARBURETOR ASSEMBLY - FIGURE 6



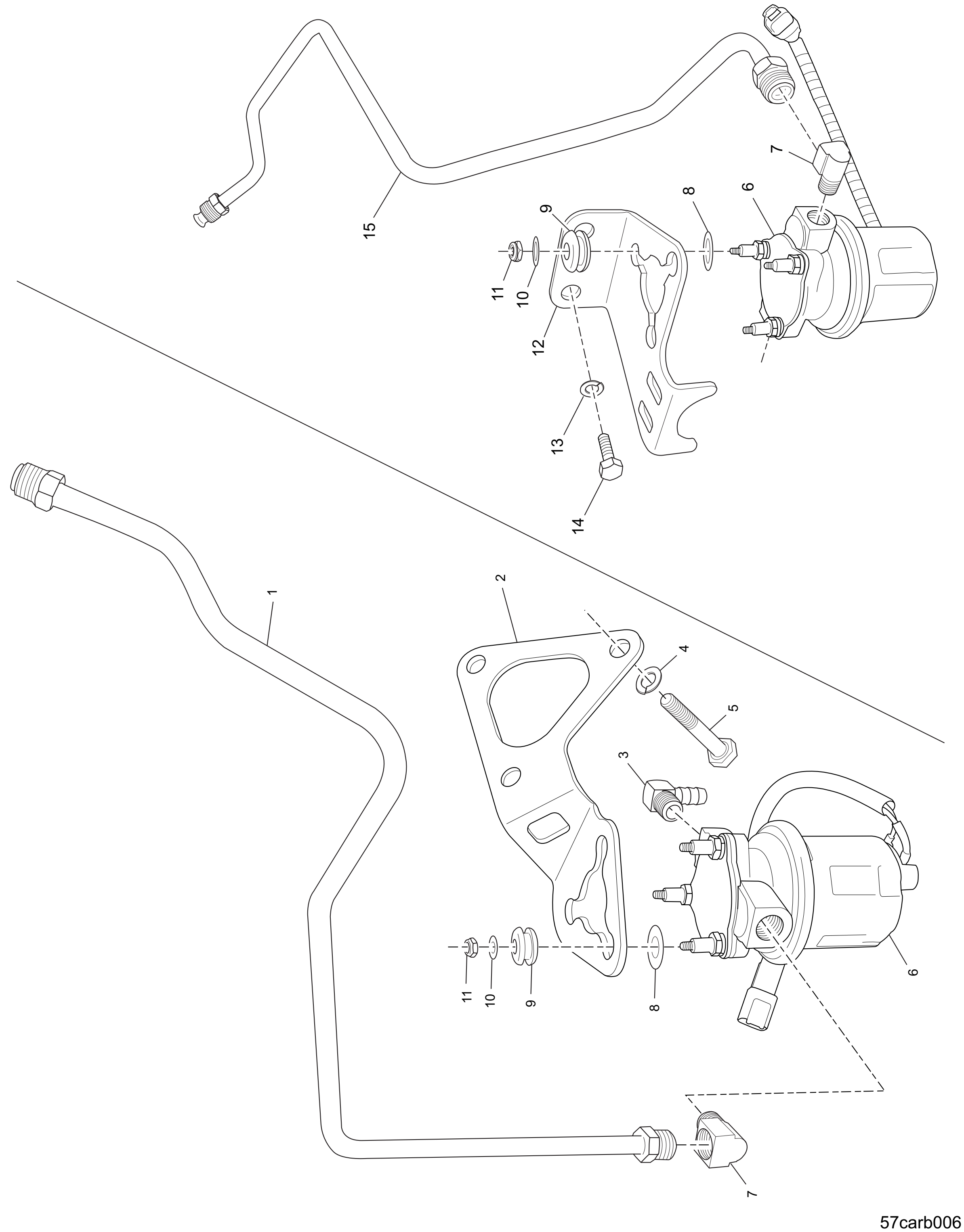


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CARBURETOR ASSEMBLY - FIGURE 6

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RA052003	**Carburetor Assembly**	1
2	RN0127	**Tube**, “J” bowl vent	2
3	RN0052A	**Fuel Bowl**, Secondary	1
4	RN0143	**Metering Block Assembly**	1
5	R178003	**Ball Joint**, 5/16-24 throttle mount (SS)	1
6	RS5122	**Bolt**, throttle cable/carb attaching	1
7	R090069	**Bracket**, throtle cable/carburetor	1
8	RS2055	**Nut**, nylock, throttle cable/carb attaching	1
9	R024025	**Adapter**, carburetor fuel inlet	1
10	RN0050	**Cover**, accelerator pump	1
11	RN0052	**Fuel Bowl**, Primary	1
12	R009142	**Screw**, Primary carburetor bowl attaching	4
13	RN0067-1	**Electric Choke Assembly**	1
14	22978	**Pivot Pin**, cable attaching (dual)	AR
15	23235	**Cable Attaching Kit**, dual station	AR
NI	R009143	**Screw**, Secondary carburetor bowl attaching	4
NI	RN0023	**Gasket**, fuel bowl screw	8
NI	RN0032	**Gasket**, fuel inlet fitting	1
NI	RN0054	**Diaphram Assembly**, accelerator pump	1
NI	RN0045	**Valve**, pump discharge nozzle	1
NI	RN0133	**Float**, carburetor	2
NI	RN0120-1	**Repair Kit**, carburetor	1

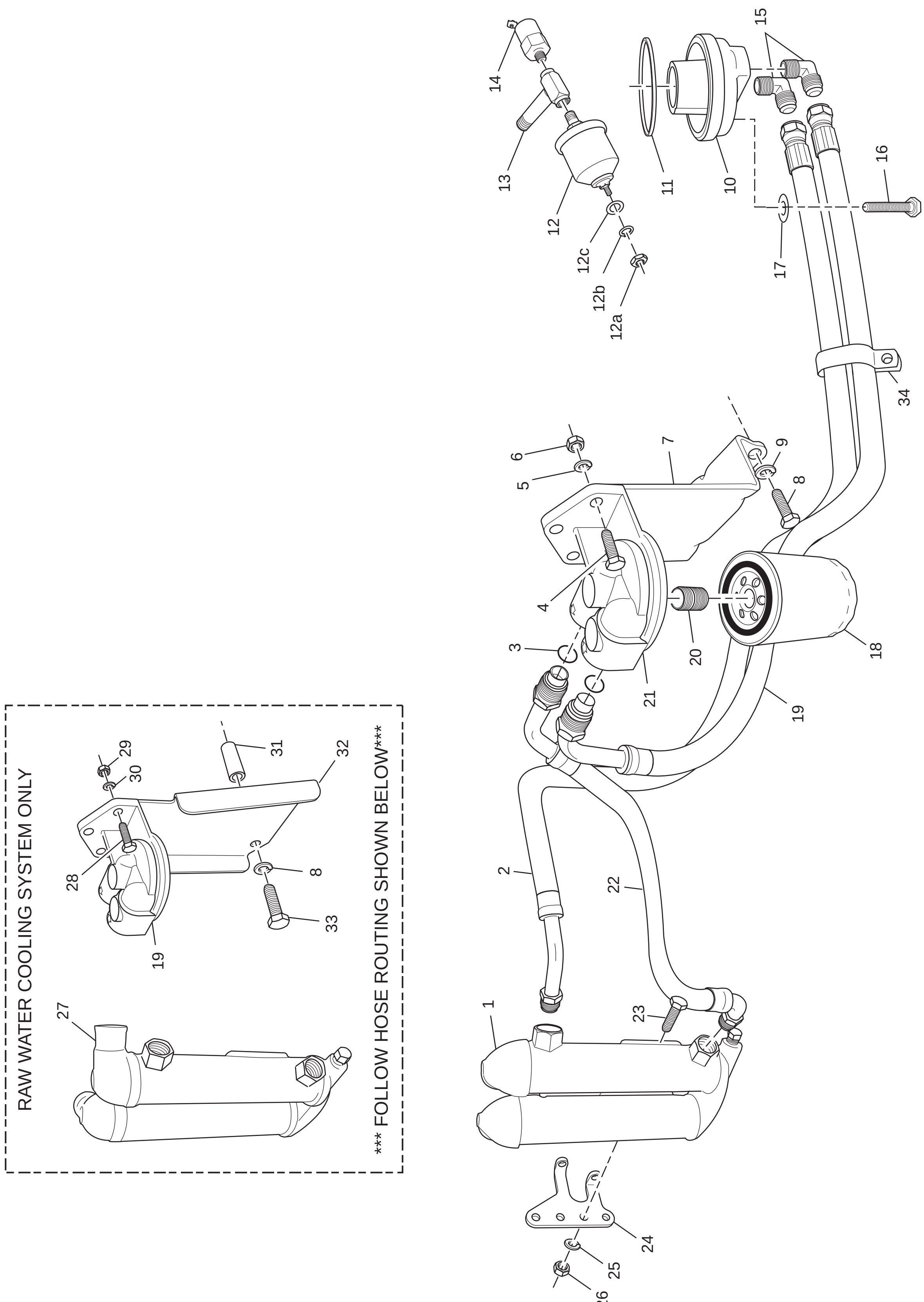
FUEL PUMP AND FUEL SYSTEM - FIGURE 7



FUEL PUMP AND FUEL SYSTEM - FIGURE 7

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RA085018B	**Fuel Line**, 5.7L Carburetor	1
2	R090223	**Bracket**, low-pressure fuel pump mounting	1
3	R024089	**Elbow**, 1/4 NPT X 3/8 Hose	1
4	RS2180	**Lockwasher**, bracket mounting	3
5	RS0305	**Bolt**, bracket mounting	3
6	RA080018	**Fuel Pump**, low-pressure	1
7	R024017	**Elbow**, 3/8 inverse flare X 1/4 NPT	1
8	R096142	**Washer**, fuel pump mounting	3
9	R094035A	**Grommet**, mounting bracket	3
10	R096142	**Washer**, fuel pump mounting	3
11	RS1521L	**Locking Nut**, low-pressure fuel pump	3
12	R090308	**Bracket**, low-pressure fuel pump	1
13	RS2180	**Lockwasher**, lpfp bracket mounting	2
14	RS0302	**Bolt**, lpfp bracket mounting	2
15	RA085018C	**Fuel Line**, lpfp to carburetor	1

REMOTE OIL FILTER COMPONENTS (Thru ‘03) - FIGURE 8

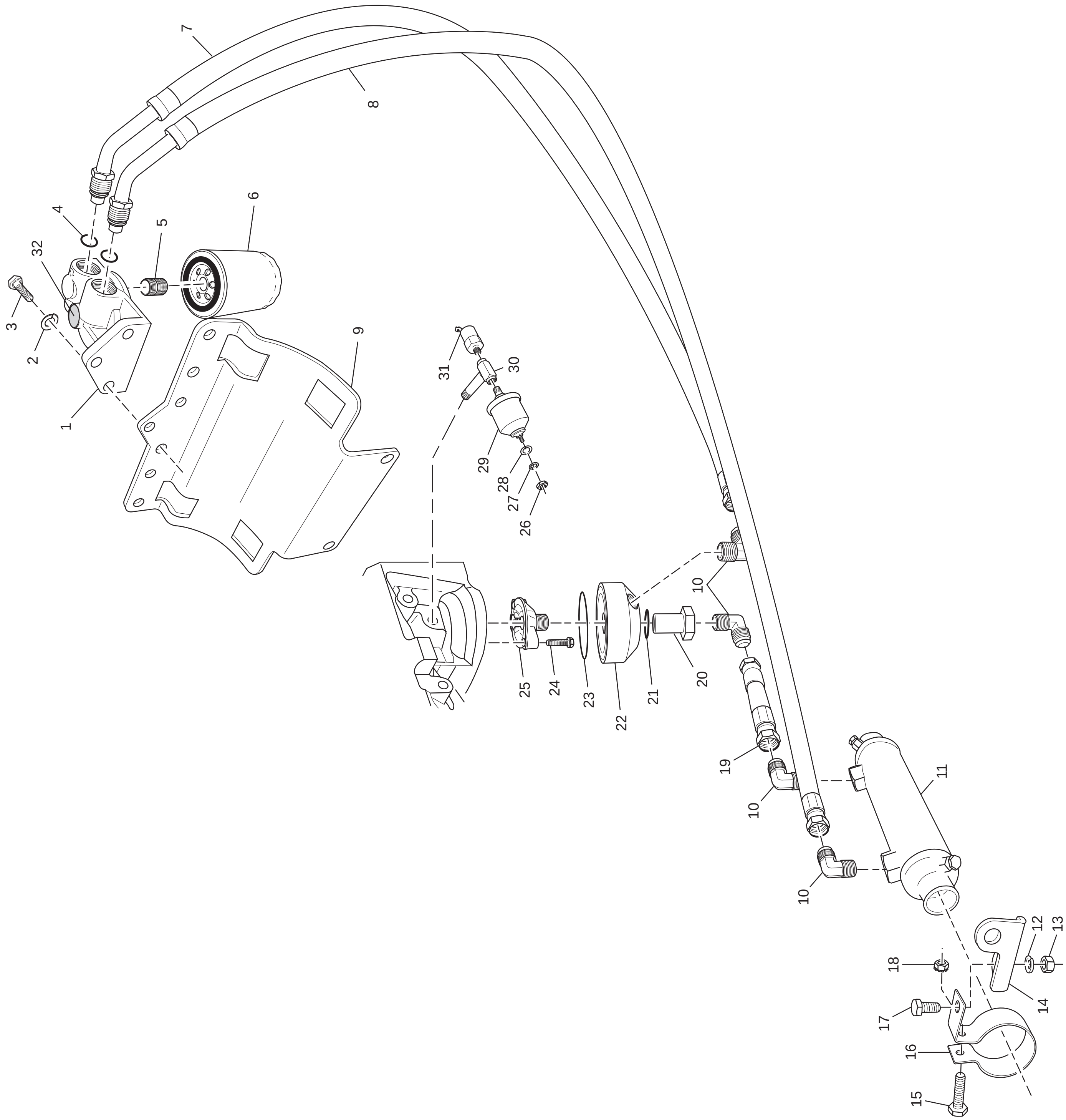


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REMOTE OIL FILTER COMPONENTS (Thru ‘03) - FIGURE 8

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	98570	**U-Cooler**, oil and transmission (FWC)	1
2	18375	**Hose Assembly**, U-cooler to bypass adapter	1
3	R047245	**O-Ring**, oil line	2
4	RS0282	**Bolt**, header mounting to brkt (FWC)	3
5	RS2179	**Lockwasher**, header mounting to brkt (FWC)	3
6	RS1027	**Nut**, header to brkt mounting (FWC)	3
7	98612	**Bracket**, ROF header mounting, (FWC)	1
8	RS0304	**Bolt**, header mounting bracket attaching (FWC)	2
9	RS2180	**Lockwasher**, attaching bolt	2
10	97667	**Adapter**, oil bypass	1
11	20156	**O-ring**, oil bypass adapter	1
12	R020001	**Sender**, oil pressure	1
12a	RS1540	**Nut**, sender terminal	1
12b	RS2197	**Lockwasher**, sender terminal	1
12c	RS2746	**Washer**, sender terminal	1
13	R024205	**Tee**, sender attaching	1
14	R020015A	**Switch**, oil pressure	1
15	R024184	**Fitting**, 5/8SAE X 1/2NPT, 90 degree	2
16	90225250	**Bolt**, flange head, oil bypass adapter attaching	2
17	92205000	**Washer**, nylon	2
18	22679	**Filter**, oil	1
19	RA045120D	**Hose Assembly**, filter header to bypass adapter	1
20	R024203	**Nipple**, header filter adapter	1
21	R079066	**Oil Filter Header**	1
22	18376	**Hose Assembly**, U-cooler to filter header	1
23	RS0304	**Bolt**, U-cooler mounting	2
24	98670	**Bracket**, U-cooler mounting	1
25	RS2180	**Lockwasher**, U-cooler mounting	2
26	RS1028	**Nut**, U-cooler mounting	2
27	98123	**U-Cooler**, oil and transmission (RWC)	1
28	RS0282	**Bolt**, header mounting to brkt (RWC)	3
29	RS1027	**Nut**, header to brkt mounting (RWC)	3
30	RS2179	**Lockwasher**, header to brkt mounting (RWC)	3
31	98609	**Spacer**, ROF, RWC bracket	2
32	98585	**Bracket**, ROF header mounting, (RWC)	1
33	90305300	**Bolt**, header mounting bracket attaching (RWC)	2
34	R127099	**Clamp**, strap	1

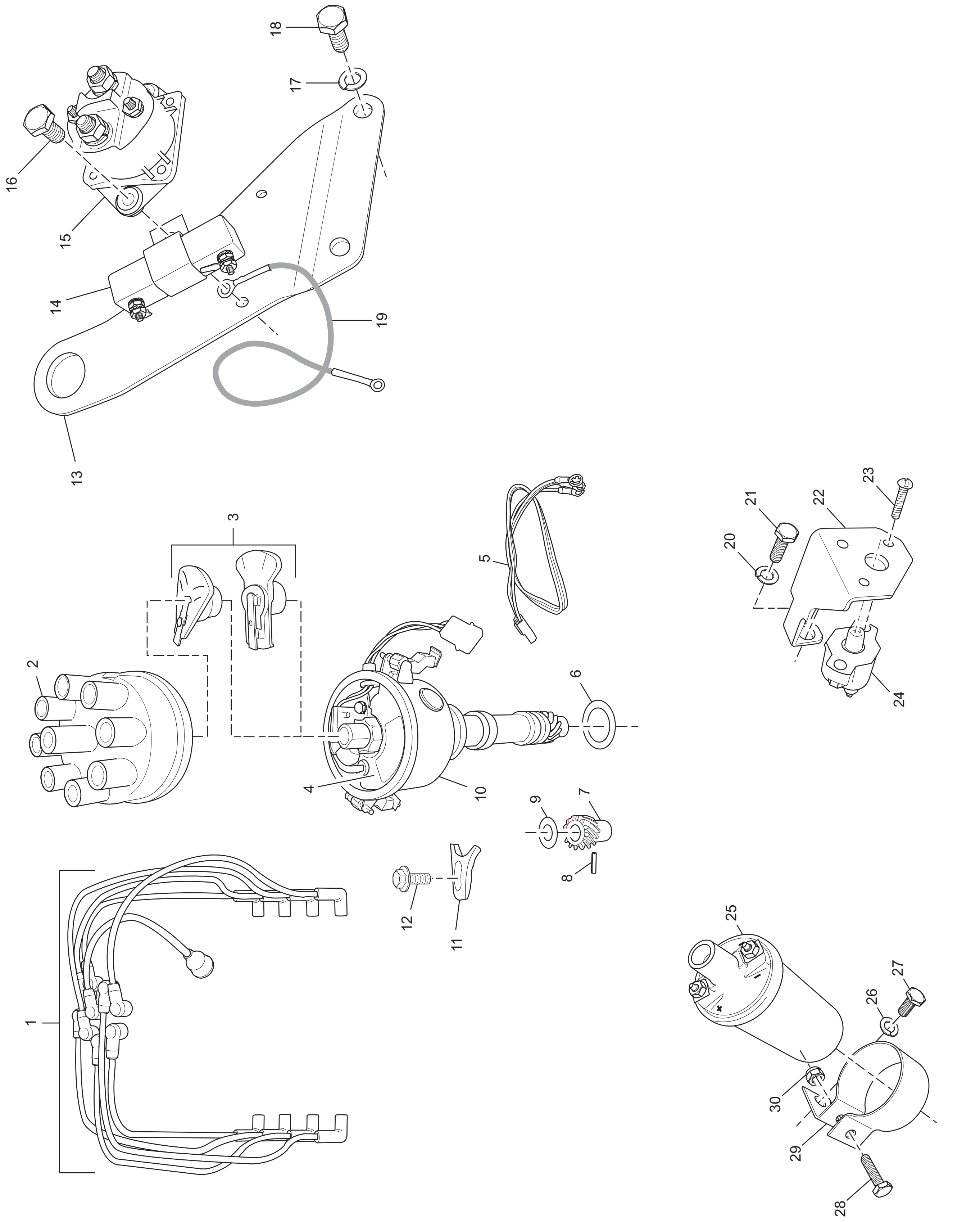
REMOTE OIL FILTER COMPONENTS ('04) - FIGURE 9



REMOTE OIL FILTER COMPONENTS ('04) - FIGURE 9

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R079066	**Oil Filter Header**	1
2	RS2179	**Lockwasher**, header mounting to brkt	3
3	RS0280	**Bolt**, header mounting to brkt	3
4	R047245	**O-Ring**, oil line	2
5	R024203	**Nipple**, header filter adapter	1
6	22679	**Filter**, oil	1
7	RA045155A	**Hose Assembly**, cooler to filter header	1
8	RA045155B	**Hose Assembly**, filter header to bypass adapter	1
9	R090258	**Bracket**, ROF header mounting	1
10	R024184	**Fitting**, 5/8SAE X 1/2NPT, 90 degree	2
11	R147049	**Cooler,** oil	1
12	RS2180	**Lockwasher,** oil cooler attaching	1
13	RS1028	**Nut,** oil cooler attaching	1
14	R090013A	**Bracket,** oil cooler attaching	1
15	RS0256	**Bolt,** oil cooler mounting	1
16	R090010	**Bracket,** oil cooler mounting	1
17	RS0302	**Bolt,** oil cooler attaching	1
18	RS2058	**Nut,** oil cooler mounting	1
19	RA045103D	**Hose Assembly**, cooler to bypass adapter	1
20	R017073	**Bolt**, oil bypass adapter	1
21	R047203	**O-ring**, small	1
22	R079051	**Adapter**, oil bypass adapter	1
23	R047202	**O-ring**, large	1
24	R009089	**Bolt**, oil adapter	2
25	RA079028	**Adapter**, oil	1
26	RS1540	**Nut**, sender terminal	1
27	RS2197	**Lockwasher**, sender terminal	1
28	RS2746	**Washer**, sender terminal	1
29	R020001	**Sender**, oil pressure	1
30	R024205	**Tee**, sender attaching	1
31	R020015A	**Switch**, oil pressure	1
32	R143175	**Switch**, oil pressure	1

IGNITION COMPONENTS (Thru ‘03)- FIGURE 10

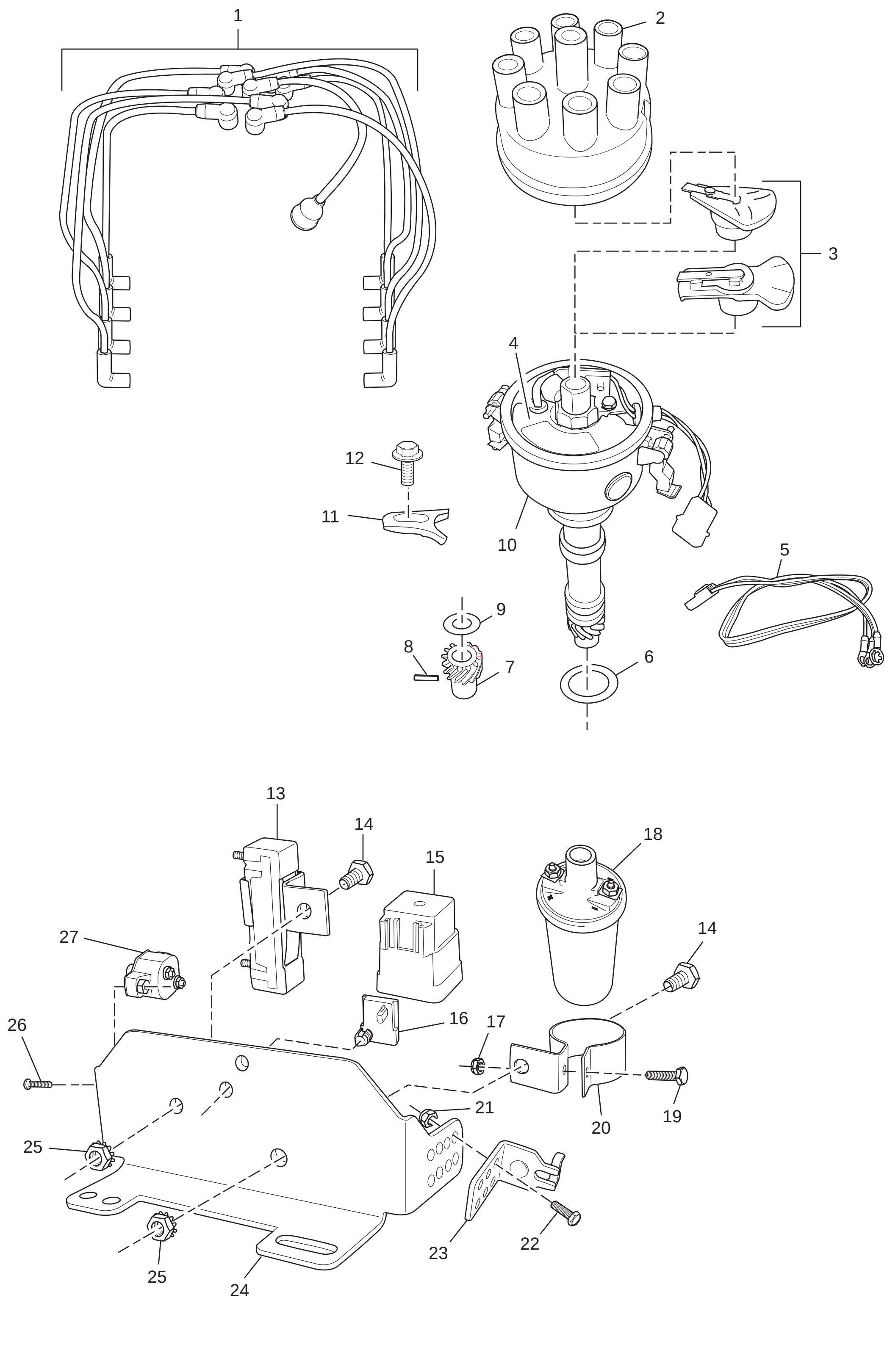


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IGNITION COMPONENTS (Thru '03) - FIGURE 10

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	97454	**Sparkplug Wire Set**	1
2	R108001	**Cap**, distributor	1
3	R103001	**Rotor**	1
NI	RP173081A	**Kit**, tune-up, cap and rotor	1
4	RP116022	**Module**, Mallory breakerless ignition	1
NI	TBD	**Kit**, spring, advance	1
5	NSS	**Harness**, Distributor interface	1
6	RM0123	**Gasket**, Distributor to block (GM)	1
7	TBD	**Gear**, right hand (Dist. # RA107042)	1
7	TBD	**Gear**, left hand (Dist. # RA107039M)	1
NI	TBD	**Kit**, Mallory distributor cap retaining clip	1
8	R082061	**Pin**, roll	1
9	TBD	**Washer**, thrust	1
10	RA107042	**Distributor Assembly (RH)**	1
10	RA107039M	**Distributor Assembly (LH)**	1
11	R127026	**Hold Down**, distributor	1
12	R009188	**Bolt**, distributor hold down	1
13	R042008	**Bracket**, electrical	1
14	R119001	**Resistor**, ballast	1
15	R130014	**Relay**, starter	1
16	RS0251	**Bolt**, relay/resistor attaching	2
17	RS2180	**Lockwasher**, electical brkt attaching	2
18	RS0304	**Bolt**, electrical brkt attaching	2
19	R101013	**Wire**, jumper green 14ga	1
20	RS2180	**Lockwasher**, circuit breaker brkt mounting	1
21	RS0304	**Bolt**, circuit breaker bracket mounting	1
22	R090074	**Bracket**, 50A circuit breaker	1
23	RS5084	**Screw**, circuit breaker attaching	2
24	R153006	**Circuit Breaker**, 50A	1
25	R117004	**Coil**, ignition	1
26	RS2180	**Lockwasher**, coil brkt attaching	1
27	RS0302	**Bolt**, coil brkt attaching	1
28	RS0256	**Bolt**, coil retaining	1
29	R090010	**Bracket**, coil	1
30	RS0258	**Nut**, coil retaining	1

IGNITION COMPONENTS (‘04)- FIGURE 11

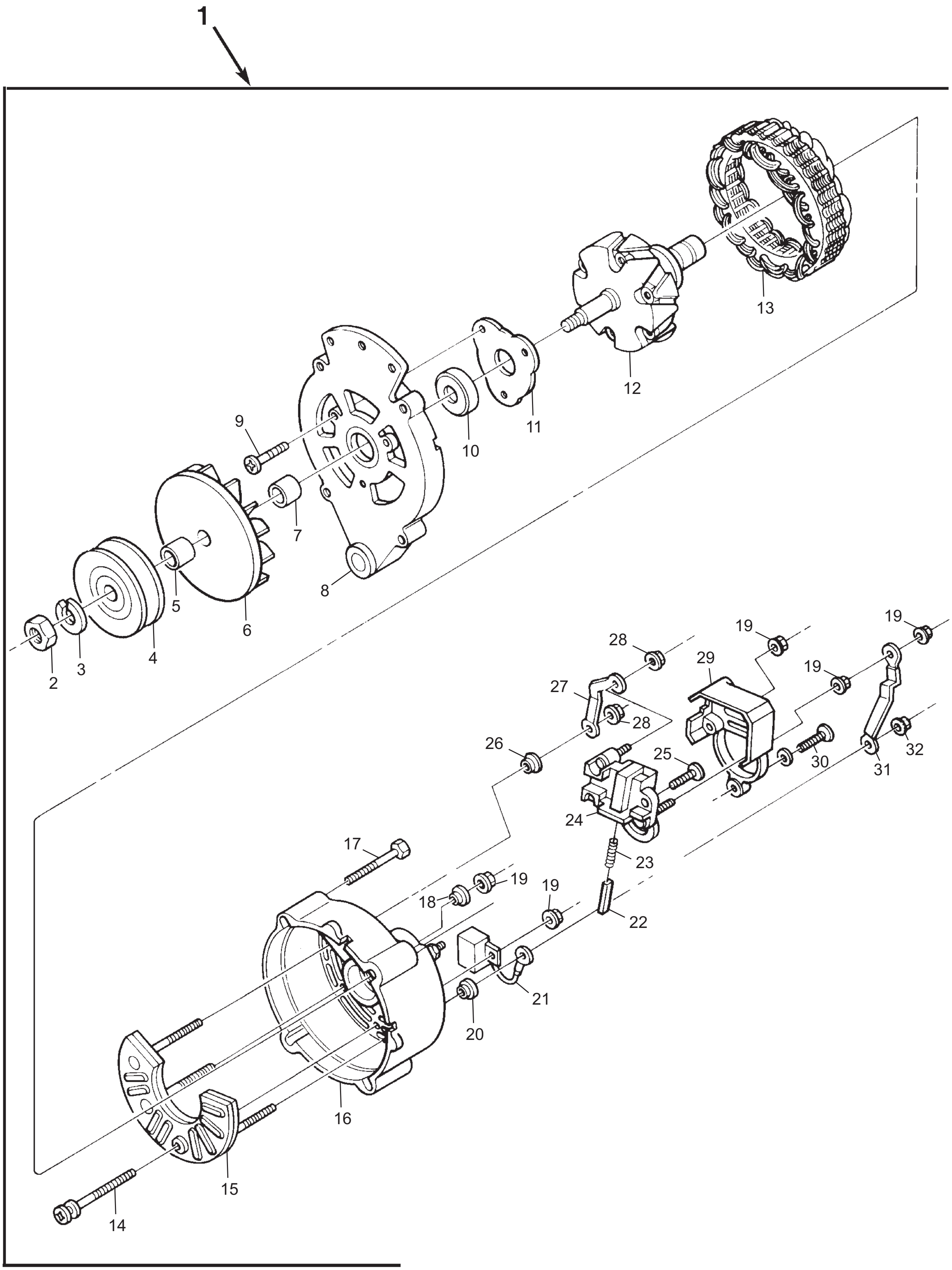


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IGNITION COMPONENTS (‘04) - FIGURE 11

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	97454	**Sparkplug Wire Set**	1
2	R108001	**Cap**, distributor	1
3	R103001	**Rotor**	1
NI	RP173081A	**Kit**, tune-up, cap and rotor	1
4	RP116022	**Module**, Mallory breakerless ignition	1
NI	TBD	**Kit**, spring, advance	1
5	NSS	**Harness**, Distributor interface	1
6	RM0123	**Gasket**, Distributor to block (GM)	1
7	TBD	**Gear**, right hand (Dist. # RA107042)	1
7	TBD	**Gear**, left hand (Dist. # RA107039M)	1
NI	TBD	**Kit**, Mallory distributor cap retaining clip	1
8	R082061	**Pin**, roll	1
9	TBD	**Washer**, thrust	1
10	RA107042	**Distributor Assembly (RH)**	1
10	RA107039M	**Distributor Assembly (LH)**	1
11	R127026	**Hold Down**, distributor	1
12	R009188	**Bolt**, distributor hold down	1
13	R119001	**Resistor**, ballast	1
14	RS0251	**Bolt**, attaching	2
15	R130011A	**Relay**, starter	1
16	R127095	**Retainer**, relay	1
17	RS0258	**Nut**, coil retaining	1
18	R117004	**Coil**, ignition	1
19	RS0256	**Bolt**, coil retaining	1
20	R090010	**Bracket**, coil	1
21	RS2055	**Nut**, nylock, throttle clip attaching	2
22	RS5122	**Bolt**, throttle clip attaching	2
23	R090086	**Clip**, throttle cable attaching	1
24	R090185B	**Bracket**, electrical	1
25	RS1078	**Nut**, attaching	2
26	RS5084	**Screw**, circuit breaker attaching	2
27	R153006C	**Circuit Breaker**, 60A	1

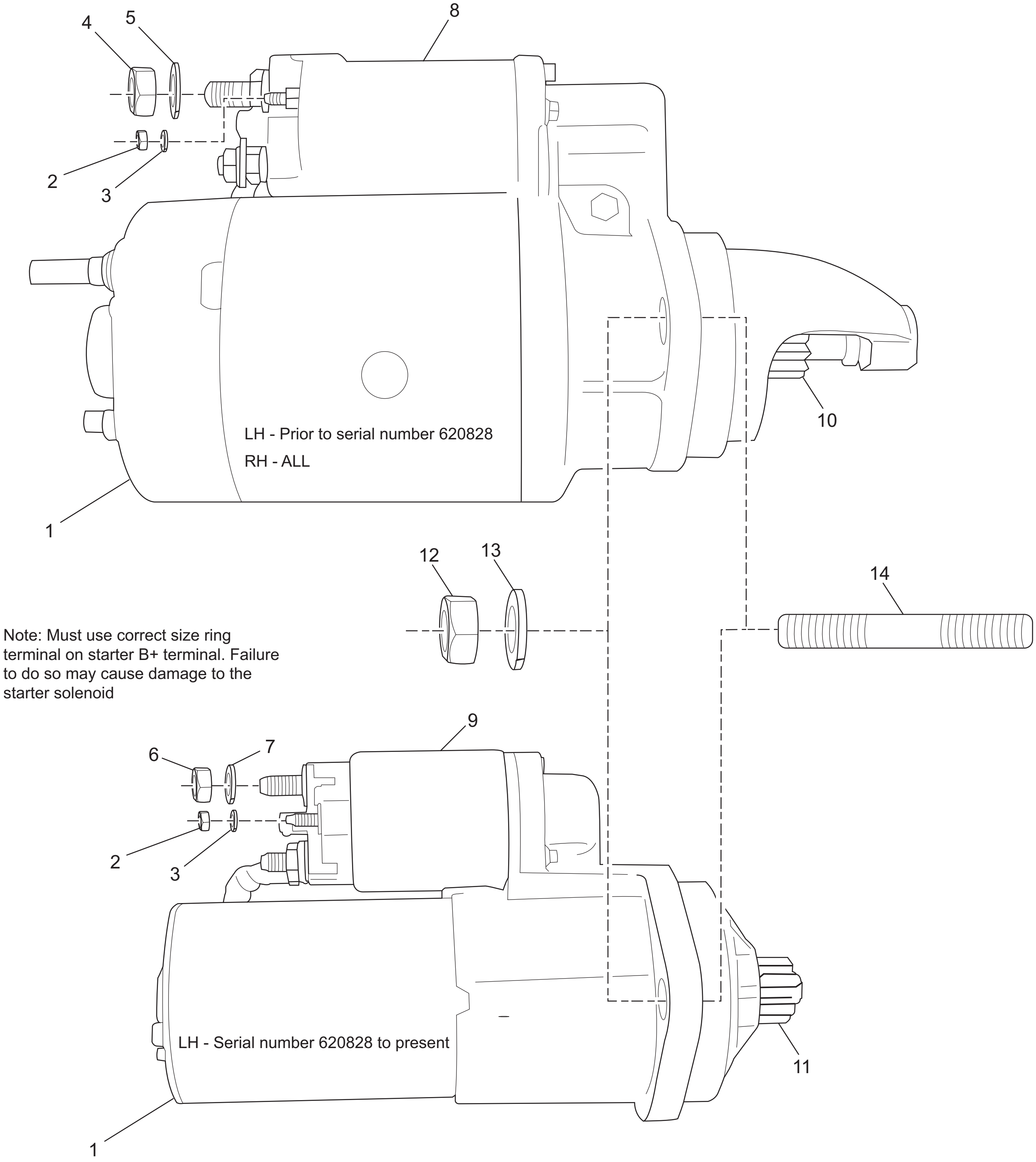
ALTERNATOR ASSEMBLY (MANDO) (Thru '03) - FIGURE 12



ALTERNATOR ASSEMBLY (MANDO) (Thru ‘03) - FIGURE 12

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	39200	**Alternator Assembly**, (55 amp), Mando	1
2	39201	**Nut**, pulley to shaft	1
3	39202	**Lockwasher**, pulley to shaft nut	1
4	39203	**Pulley**, drive	1
5	39204	**Spacer**, pulley to fan	1
6	39205	**Fan**, cooling	1
7	39206	**Spacer**, cooling fan to frame	1
8	39207	**Housing Assembly**, front	1
9	39209	**Screw**, retainer attaching	3
10	39210	**Bearing**, rotor	1
11	39211	**Retainer**, bearing	1
12	39212	**Rotor Assembly**	1
13	39213	**Stator Assembly**	1
14	39217	**Screw Set**, rectifier attaching	1
15	39216	**Rectifier Assembly**	1
16	39214	**Housing Assembly**, rear	1
17	39222	**Bolt**, housing assembly	4
18	39218	**Insulator**, terminal screw	1
19	39219	**Nut**, terminal screw	5
20	39221	**Insulator**, terminal screw	1
21	39220	**Condenser Assembly**	1
22	39224	**Brush**	2
23	39225	**Brush Spring**	2
24	39223	**Voltage Regulator Assembly**	1
25	39226	**Screw**, regulator attaching	2
26	39218	**Insulator**, terminal screw	1
27	39227	**Strap**, Terminal-L	1
28	39219	**Nut**, terminal screw	2
29	39228	**Cover**, regulator	1
30	39229	**Screw**, cover attaching	1
31	39230	**Strap**, Terminal-B	1
32	39231	**Nut**, terminal screw	1

STARTER ASSEMBLY COMPONENTS - FIGURE 13

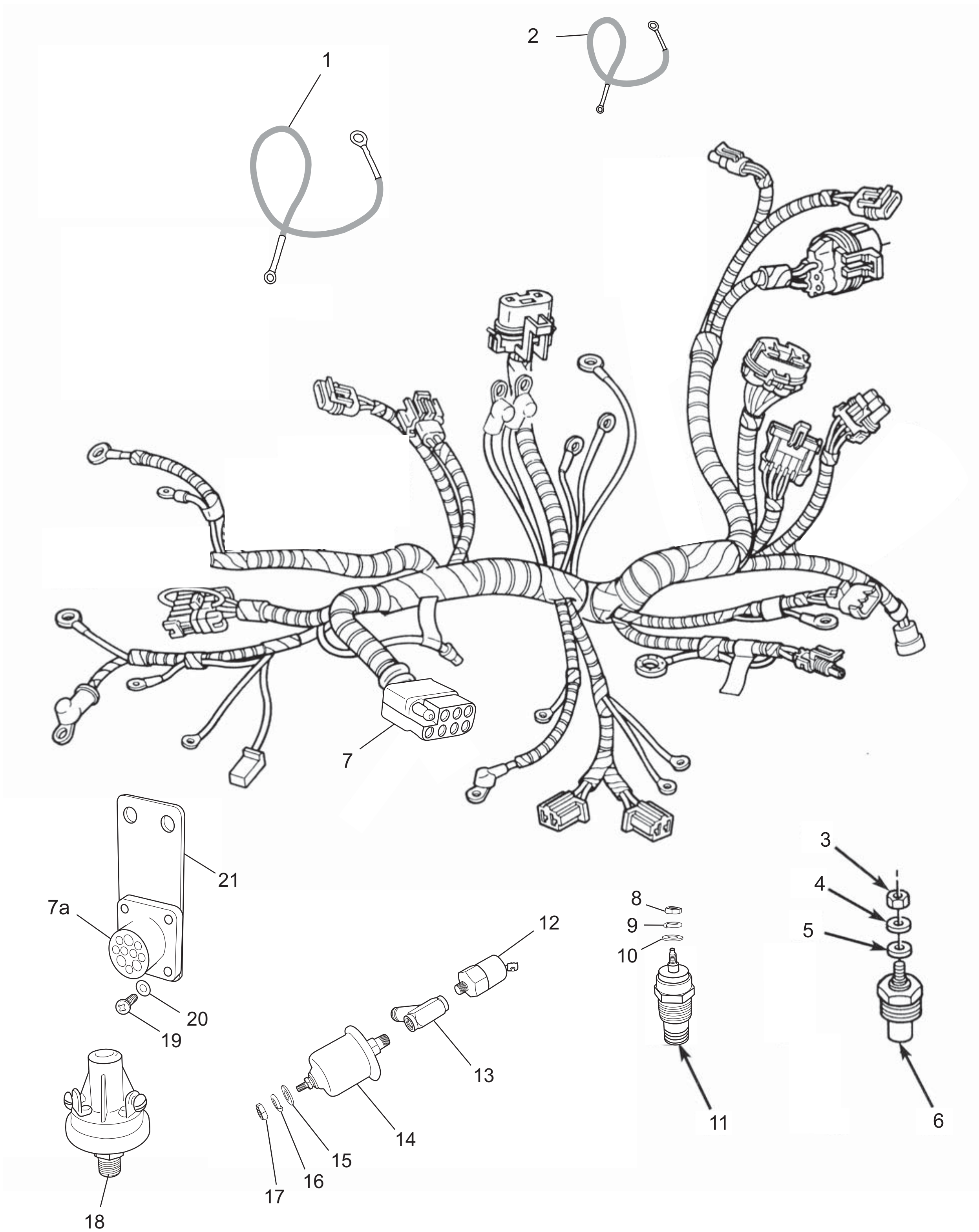


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STARTER ASSEMBLY COMPONENTS - FIGURE 13

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RA122009	**Starter Motor Assembly** (LH rotation)	1
1	RA122008	**Starter Motor Assembly** (RH rotation)	1
2	RS7036	**Nut**, solenoid terminal	1
3	93003000	**Lockwasher**, solenoid terminal	1
4	RS7019	**Nut**, solenoid terminal	1
5	RS7081	**Lockwasher**, solenoid terminal	1
6	RS7018	**Nut**, solenoid terminal	1
7	RS7080	**Lockwasher**, solenoid terminal	1
8	RU0050	**Solenoid Assembly**, starter	1
9	RU0050B	**Solenoid Assembly**, starter	1
10	RU0051	**Drive Assembly**, clutch (LH)	1
10	RU0052	**Drive Assembly**, clutch (RH)	1
11	TBD	**Drive**, starter	1
12	RS1029	**Nut**, starter mounting	2
13	RS2181	**Lockwasher**, starter mounting	2
14	R031018	**Stud**, starter mounting	2

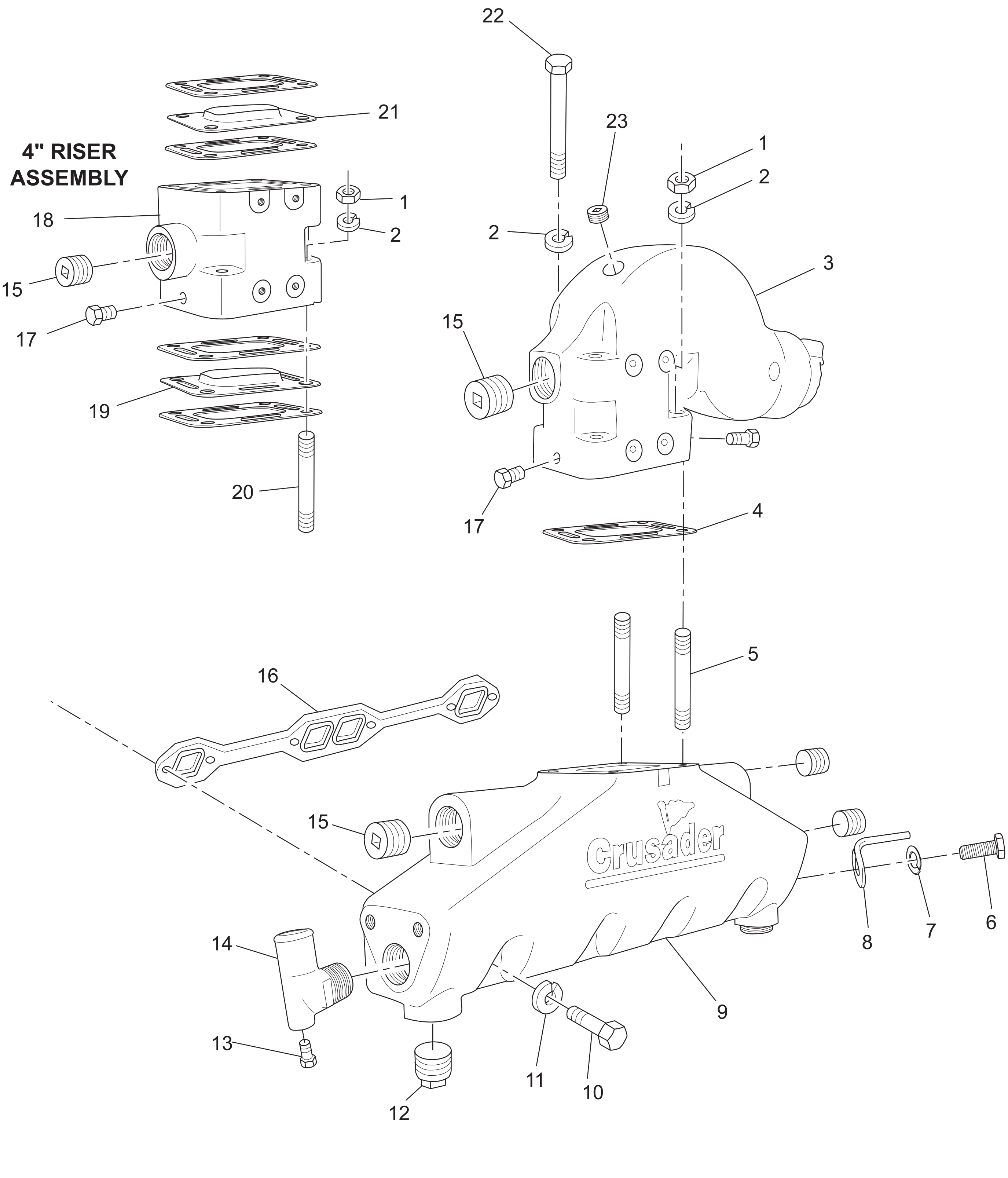
WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 14



WIRING HARNESS ASSEMBLIES and SENDERS - FIGURE 14

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R101013	**Wire**, 14ga, Green, starter relay grd (Thru ‘03)	1
1	R101013	**Wire**, 14ga, Green, H.E. grd (FWC)	1
2	part of item #7	**Wire**, 10ga, Red, c.b. to starter relay (Thru ‘03)	1
3	NSS	**Nut**, temp switch terminal	1
4	NSS	**Lockwasher**, temp switch terminal	1
5	NSS	**Washer**, temp switch terminal	1
6	R020014A	**Switch**, engine coolant temperature (210º)	1
7	R121026H	**Harness**, engine (Thru ‘03)	1
7a	RA121080	**Harness**, engine (‘04)	1
NI	NSS	**Wire**, 16ga, Red, 15”, resistor to coil	1
NI	NSS	**Fuse**, 5A slow blow	1
8	RS1540	**Nut**, sender terminal	1
9	RS2197	**Lockwasher**, sender terminal	1
10	RS2746	**Washer**, sender terminal	1
11	R020003	**Sender**, temperature	1
11	22701	**Sender**, temperature (VDO)	AR
12	R020015A	**Switch**, oil pressure	1
13	R024205	**Tee**, sender attaching	1
14	R020001	**Sender**, oil pressure	1
14	22702	**Sender**, oil pressure (VDO)	AR
15	RS2746	**Washer**, sender terminal	1
16	RS2197	**Lockwasher**, sender terminal	1
17	RS1540	**Nut**, sender terminal	1
18	R153005	**Switch**, oil pressure, fuel pump intrlk	1
19	RS5115	**Screw**,main harness attaching	4
20	R096142	**Washer**, main harness attaching	4
21	R090291	**Bracket**, 10-pin main harness attaching (‘04)	4
N.I.	R127039	**Clamp,** formed	2
N.I.	RS0302	**Bolt**, clamp attaching, head	1
N.I.	RS2180	**Lockwasher**, clamp attaching, head	1
N.I.	90105075	**Bolt**, clamp attaching, block	1
N.I.	RS2178	**Lockwasher**, clamp attaching, block	1

EXHAUST MANIFOLD and COMPONENTS - FIGURE 15

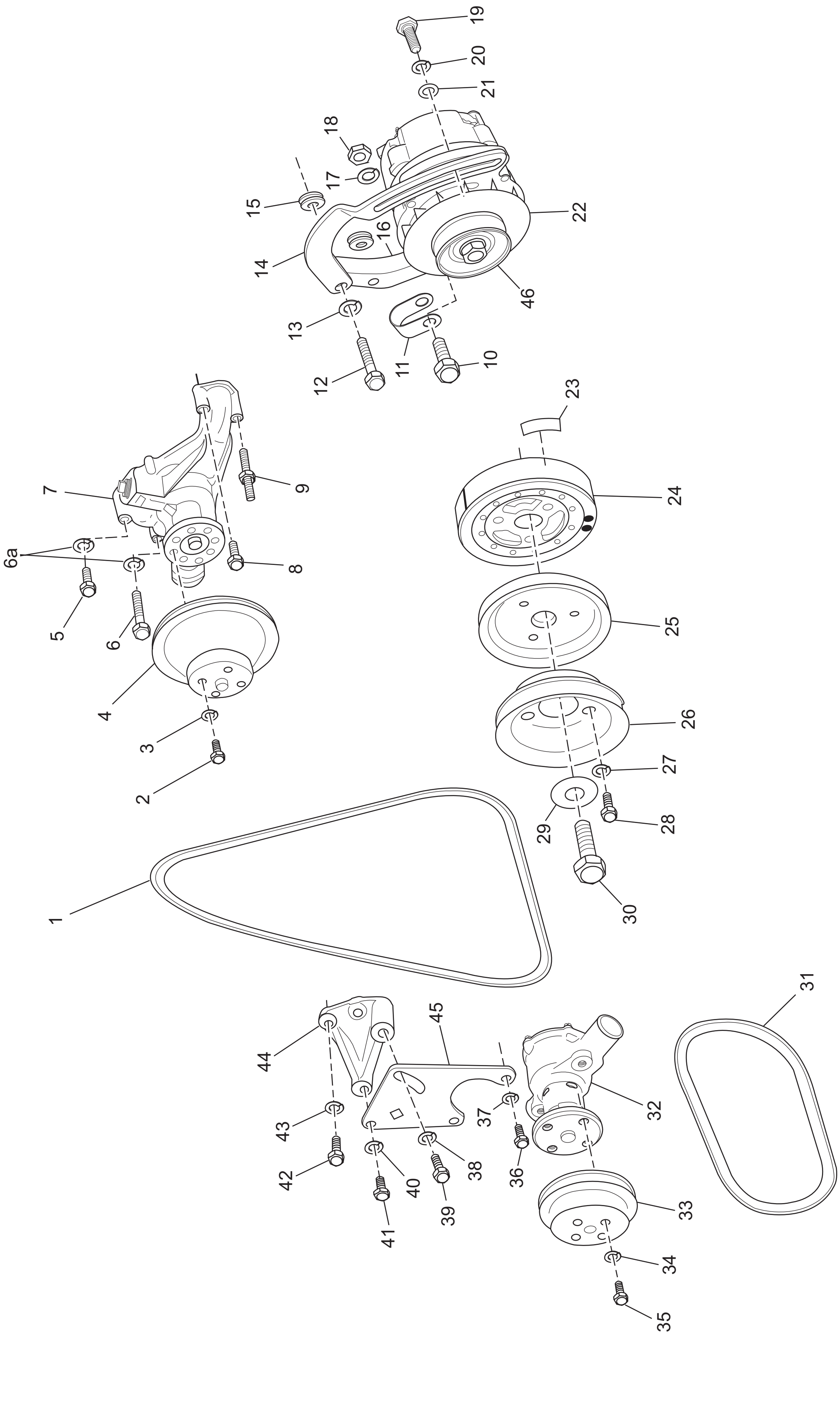


EXHAUST MANIFOLD and COMPONENTS - FIGURE 15

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS1028	**Nut**, elbow attaching stud	8
2	RS2180	**Lockwasher**, elbow attaching stud	8
3	R029015	**Elbow**, exhaust manifold	2
4	98127	**Gasket**, manifold/elbow/riser	4
5	20827	**Stud**, exhaust elbow attaching	4
6	RS0302	**Bolt**, wire loom attaching	2
7	RS2180	**Lockwasher**, attaching bolt	2
8	R096144	**Bracket**, spark plug wire loom	2
9	98243	**Manifold**, exhaust	2
10	RS0316	**Bolt**, manifold to cylinder head	8
11	RS2180	**Lockwasher**, manifold to cylinder head	8
12	103876	**Plug**, exhaust manifold (1”)	AR
13	RS3552	**Plug**, drain	2
14	30624	**Fitting**, water elbow (90 degree)	2
15	RS3556	**Plug**, exhaust elbow (3/4”)	AR
16	96306	**Gasket**, manifold to cylinder head	2
17	RS3554	**Plug**, drain	4
18	98128	**Exhaust Riser, 4”**	2
19	98124A	**Plate**, vented	AR
20	20783	**Stud**, riser mounting (2 3/4”)	8
21	98124	**Plate**, block-off	AR
22	90305500	**Bolt**, exhaust elbow attaching (4 3/4”)	4
23	RS3539	**Plug**, exhaust elbow attaching	2
*	22818	**4-Inch Riser Kit**	1

***NOTE:** See Raw Water and Fresh Water Cooling sections for additional parts used on each cooling system for Crusader engines.

ACCESSORY DRIVE SYSTEM COMPONENTS (Thru ‘03) - FIGURE 16

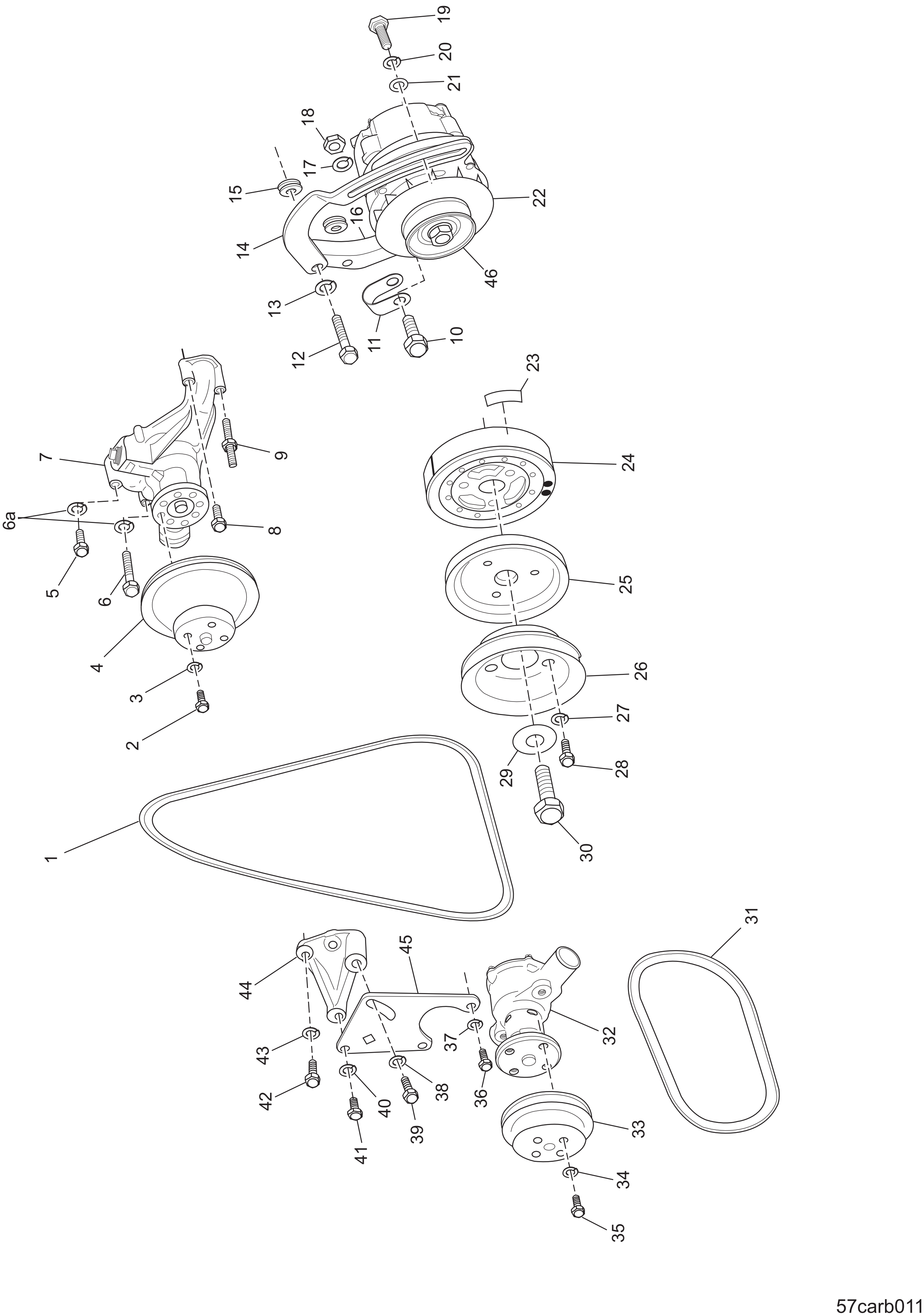


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ACCESSORY DRIVE SYSTEM COMPONENTS (Thru ‘03) - FIGURE 16

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	96307	**Belt**, alternator drive	1
2	RS0775	**Bolt**, water pump pulley attaching	4
3	RS2179	**Lockwasher**, water pump pulley attaching bolt	4
4	R065049	**Pulley**, water pump	1
5	RS0308	**Bolt**, water pump mounting	1
6	90305300	**Bolt**, water pump mounting	1
6a	RS2180	**Lockwasher**, water pump mounting	2
7	RA057027	**Water Pump Assembly**	1
8	90305275	**Bolt**, water pump mounting	1
9	R095026	**Stud**, water pump mounting	1
10	RS0355	**Bolt**, alternator mounting (lower)	1
11	98184	**Clip**, alternator adjusting	1
12	RS0307	**Bolt**, alternator brkt mounting	2
13	RS2180	**Lockwasher**, alternator brkt mounting	2
14	98246	**Strap**, alternator adjusting/mounting	1
15	92300020	**Spacer**, alternator bracket mounting	4
16	98245	**Bracket**, alternator mounting	1
17	RS2182	**Lockwasher**, alternator mounting	1
18	95500000	**Nut**, alternator mounting	1
19	RS0282	**Bolt**, alternator mounting (upper)	1
20	RS2179	**Lockwasher**, alternator mounting bolt	1
21	92200020	**Washer**, alternator mounting bolt	1
22	39200	**Alternator Assembly** (55 amp)	1
23	R143151	**Decal**, Timing (5.7L) use w/Balancer R064010A	1
24	R064010	**Balancer**, crankshaft (‘96-’01)	1
24	R064010A	**Balancer**, crankshaft (‘02-newer)	1
25	R065048	**Pulley**, alternator drive belt	1
26	R065046	**Pulley**, raw water pump belt	1
27	RS2180	**Lockwasher**, pulley mounting bolts	3
28	90315100	**Bolt**, rwp/alt drive belt pulley mounting	3
29	R096074	**Washer**, crankshaft balancer	1
30	R009091	**Bolt**, crankshaft balancer	1
31	97178	**Belt**, raw water pump drive	1
32	RA057031	**Raw Water Pump Assembly**	1
33	R065047	**Pulley**, raw water pump	1
34	RS2179	**Lockwasher**, raw water pump pulley attaching bolt	3
35	RS0775	**Bolt**, raw water pump pulley attaching	3
36	RS0282	**Bolt**, raw water pump mounting	2

ACCESSORY DRIVE SYSTEM COMPONENTS (Thru ‘03) - FIGURE 16 (cont’d)

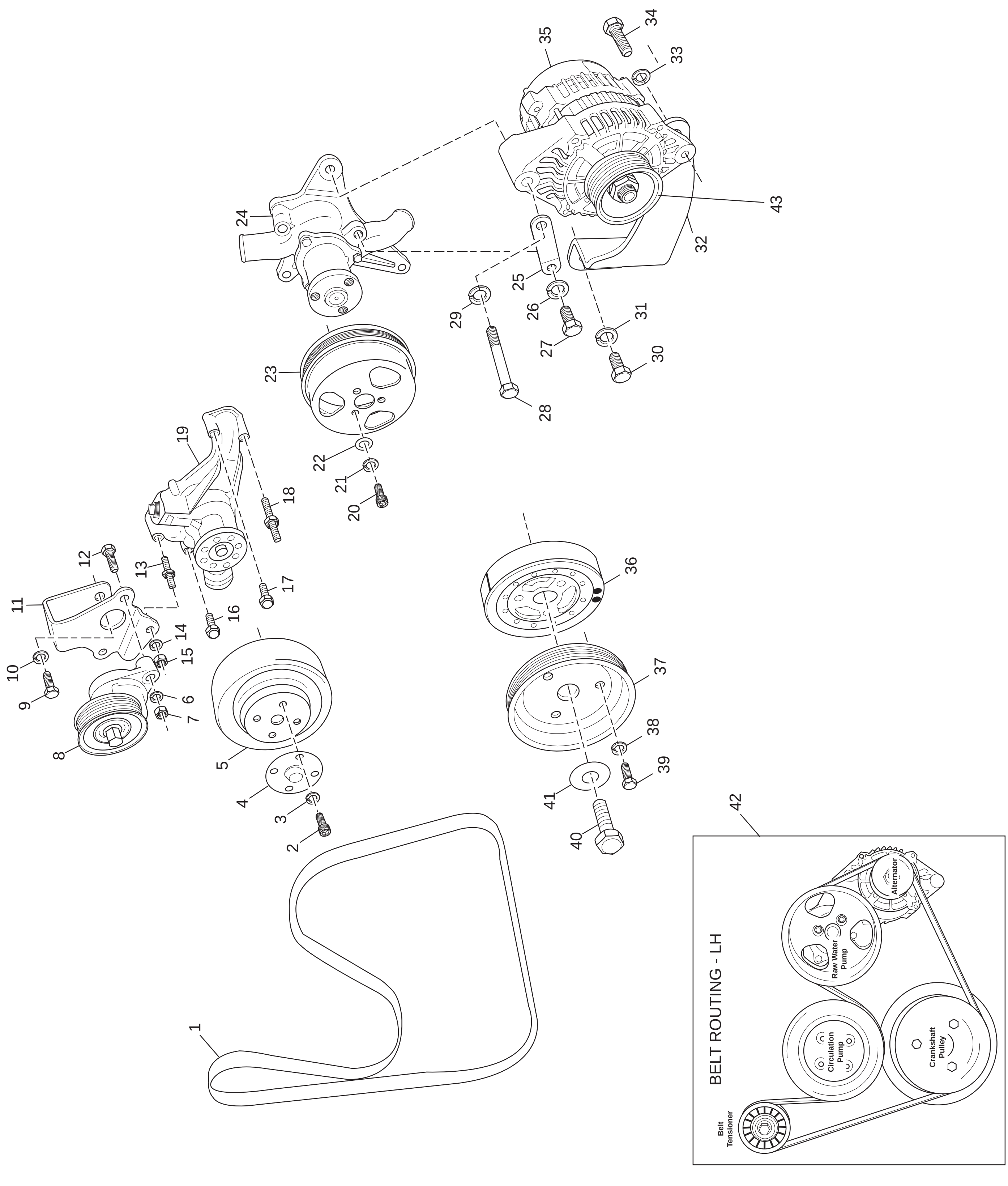


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ACCESSORY DRIVE SYSTEM COMPONENTS (Thru ‘03) - FIGURE 16 (cont’d)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
37	RS2179	**Lockwasher**, raw water pump mounting bolt	2
38	RS2181	**Lockwasher**, bracket attaching bolt	1
39	RS0327	**Bolt**, bracket attaching	1
40	RS2181	**Lockwasher**, bracket attaching bolt	1
41	RS0327	**Bolt**, bracket attaching	1
42	RS0307	**Bolt**, bracket attaching	2
43	RS2180	**Lockwasher**, bracket attaching bolt	2
44	R090264	**Bracket**, raw water pump	1
45	R090263	**Bracket**, raw water pump	1
46	R065038	**Pulley**, Alternator 3/8” Drive Belt	1
46	R065038A	**Pulley**, Alternator 1/2” Drive Belt	1

ACCESSORY DRIVE SYSTEM COMPONENTS (SERPENTINE - LH) (‘04) - FIGURE 17

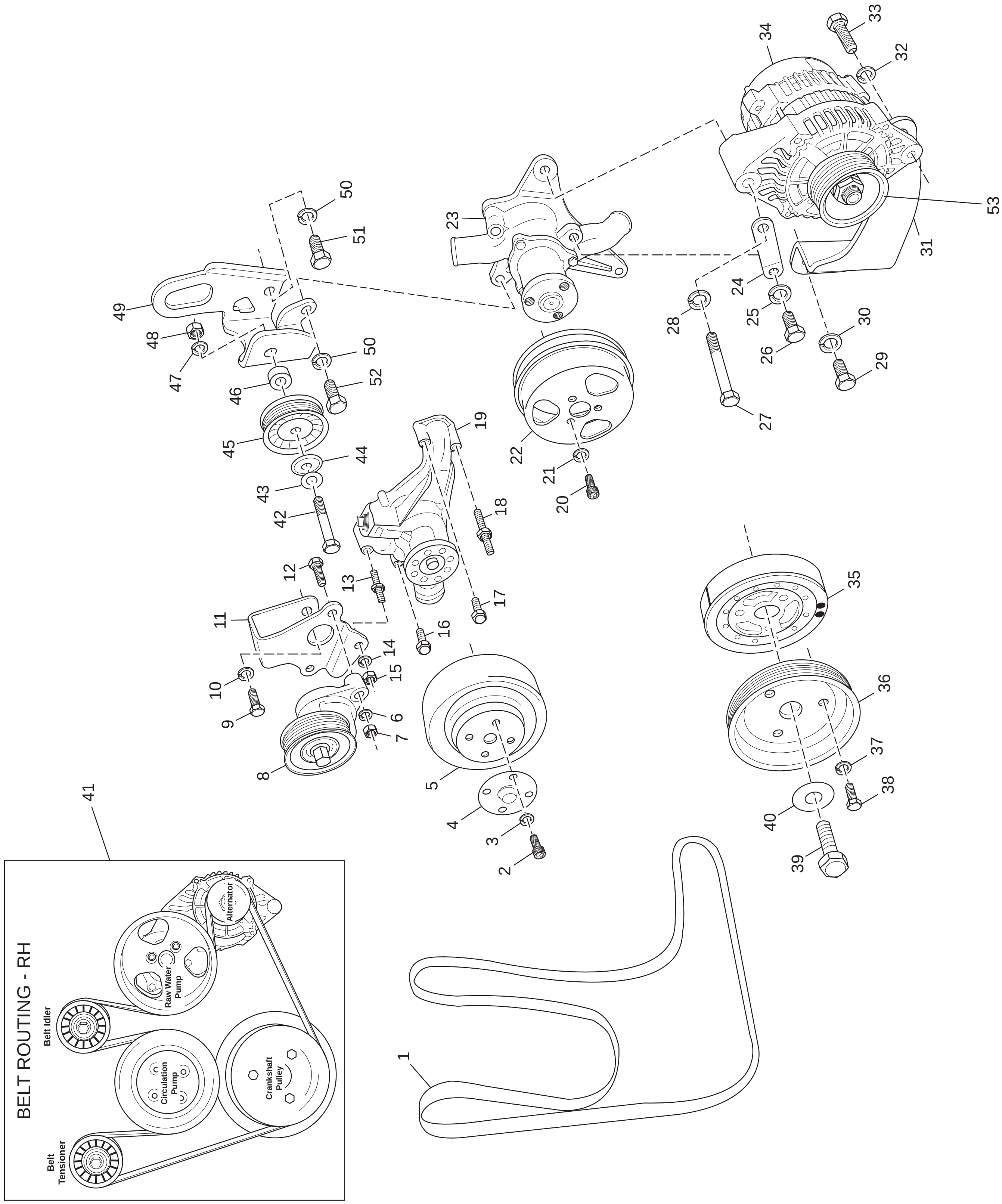


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ACCESSORY DRIVE SYSTEM COMPONENTS (SERPENTINE - LH) (‘04) - FIGURE 17

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R066028	**Belt**, serpentine drive, 5.7L - LH	1
2	90274075	**Bolt**, water pump pulley attaching	4
3	RS2307	**Lockwasher**, water pump pulley attaching bolt	4
4	R096147	**Cover**, water pump pulley	1
5	R065053	**Pulley**, water pump	1
6	RS2180	**Lockwasher**, belt tensioner attaching	2
7	RS1028	**Nut**, belt tensioner attaching	2
8	RA068001	**Belt Tensioner Assembly**	1
9	RS0304	**Bolt**, tensioner bracket attaching	1
10	RS2180	**Lockwasher**, tensioner bracket attaching	1
11	R090287B	**Bracket**, belt tensioner mounting	1
12	RS0308	**Bolt**, belt tensioner attaching	2
13	R095026	**Stud**, water pump mounting	1
14	RS2179	**Lockwasher**, belt tensioner attaching	2
15	RS1527	**Nut**, belt tensioner attaching	2
16	90305275	**Bolt**, water pump mounting	1
17	90305275	**Bolt**, water pump mounting	1
18	R095026	**Stud**, water pump mounting	1
19	RA057027	**Water Pump Assembly**	1
20	99335016	**Bolt**, RWP pulley attaching	3
21	93934000	**Lockwasher**, RWP pulley attaching	3
22	92934000	**Flatwasher**, RWP pulley attaching	3
23	R065052	**Pulley**, raw water pump	1
24	RA057034	**Raw Water Pump Assembly**	1
25	R090289	**Bracket**, alternator mounting	1
26	RS2180	**Lockwasher**, alternator mounting bolt	1
27	RS0304	**Bolt**, alternator mounting	1
28	RS0311	**Bolt**, alternator mounting	1
29	RS2180	**Lockwasher**, alternator mounting bolt	1
30	RS0304	**Bolt**, alternator bracket attaching	1
31	RS2180	**Lockwasher**, alternator bracket attaching bolt	1
32	R090288	**Bracket**, alternator mounting	1
33	RS7069	**Lockwasher**, alternator mounting bolt	1
34	RS6738	**Bolt**, alternator mounting	1
35	RA097007C	**Alternator Assembly** (70 amp serpentine)	1
36	R064010A	**Balancer**, crankshaft	1
37	R065051	**Pulley**, serpentine drive belt	1
38	RS2180	**Lockwasher**, drive belt pulley attaching bolt	3
39	90315100	**Bolt**, drive belt pulley attaching	3
40	R009091	**Bolt**, crankshaft balancer	1
41	R096074	**Washer**, crankshaft balancer	1
N.I.	97224000	**Nut**, alternator wire attaching	2
N.I.	93920000	**Lockwasher**, alternator wire attaching	2
42	R143165	**Decal**, belt routing (5.7L)	1
43	R065055	**Pulley**, Alternator (5.X/6.0L), Serpentine	1

ACCESSORY DRIVE SYSTEM COMPONENTS (SERPENTINE - RH) (‘04) - FIGURE 18

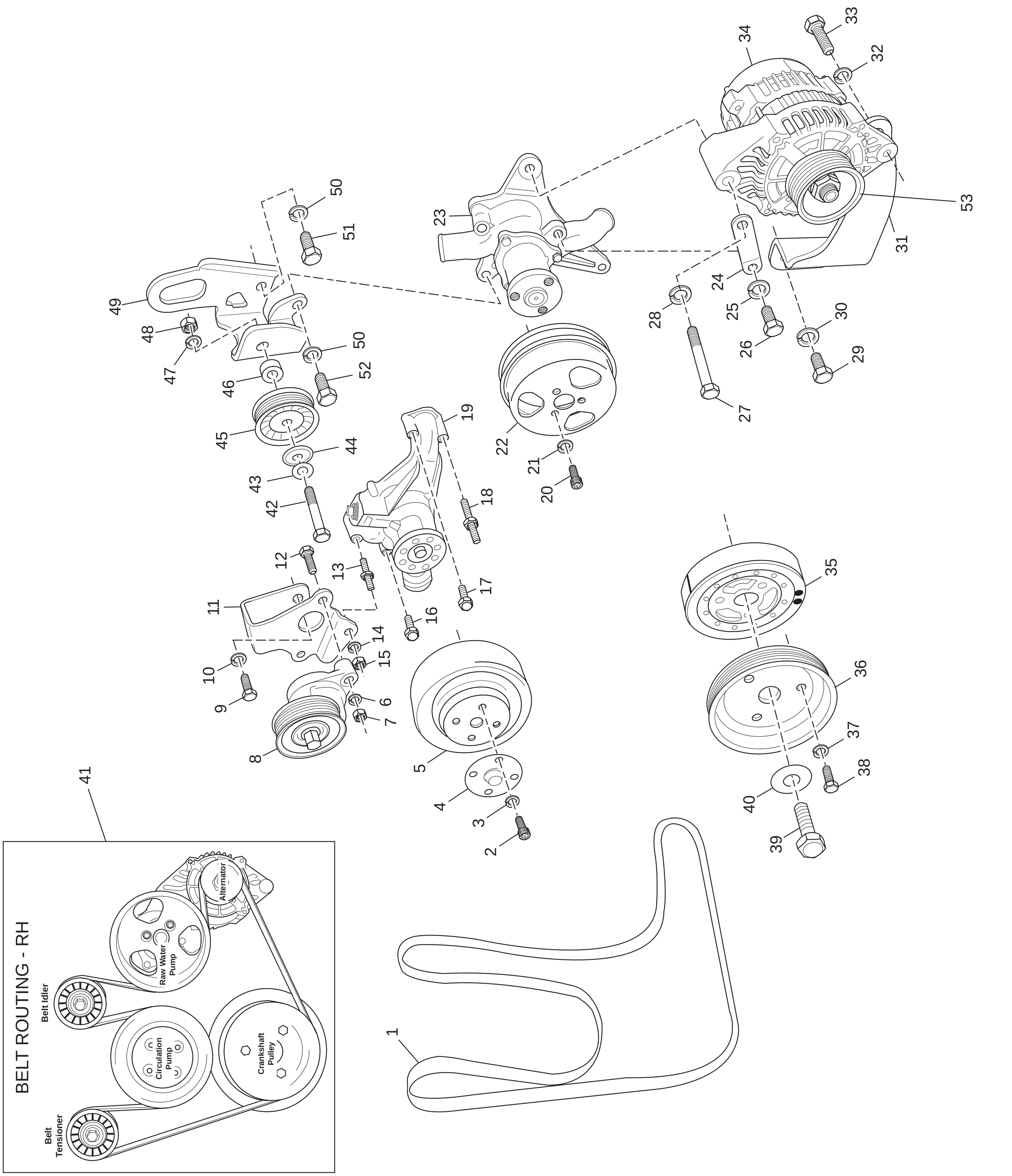


57carb011_04RH

ACCESSORY DRIVE SYSTEM COMPONENTS (SERPENTINE - RH) (‘04) - FIGURE 18

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R066029A	**Belt**, serpentine drive, 5.7L (RH)	1
2	90274075	**Bolt**, water pump pulley attaching	4
3	RS2307	**Lockwasher**, water pump pulley attaching bolt	4
4	R096147	**Cover**, water pump pulley	1
5	R065053	**Pulley**, water pump	1
6	RS2180	**Lockwasher**, belt tensioner attaching	2
7	RS1028	**Nut**, belt tensioner attaching	2
8	RA068001	**Belt Tensioner Assembly**	1
9	RS0304	**Bolt**, tensioner bracket attaching	1
10	RS2180	**Lockwasher**, tensioner bracket attaching	1
11	R090287B	**Bracket**, belt tensioner mounting	1
12	RS0308	**Bolt**, belt tensioner attaching	2
13	R095026	**Stud**, water pump mounting	1
14	RS2179	**Lockwasher**, belt tensioner attaching	2
15	RS1527	**Nut**, belt tensioner attaching	2
16	90305275	**Bolt**, water pump mounting	1
17	90305275	**Bolt**, water pump mounting	1
18	R095026	**Stud**, water pump mounting	1
19	RA057027	**Water Pump Assembly**	1
20	99335016	**Bolt**, RWP pulley attaching	3
21	93934000	**Lockwasher**, RWP pulley attaching	3
22	R065052A	**Pulley**, raw water pump (RH)	1
23	RA057034	**Raw Water Pump Assembly**	1
24	R090289	**Bracket**, alternator mounting	1
25	RS2180	**Lockwasher**, alternator mounting bolt	1
26	RS0304	**Bolt**, alternator mounting	1
27	RS0311	**Bolt**, alternator mounting	1
28	RS2180	**Lockwasher**, alternator mounting bolt	1
29	RS0304	**Bolt**, alternator bracket attaching	1
30	RS2180	**Lockwasher**, alternator bracket attaching bolt	1
31	R090288	**Bracket**, alternator mounting	1
32	RS7069	**Lockwasher**, alternator mounting bolt	1
33	RS6738	**Bolt**, alternator mounting	1

ACCESSORY DRIVE SYSTEM COMPONENTS (SERPENTINE - RH) (‘04) - FIGURE 18 (cont’d)

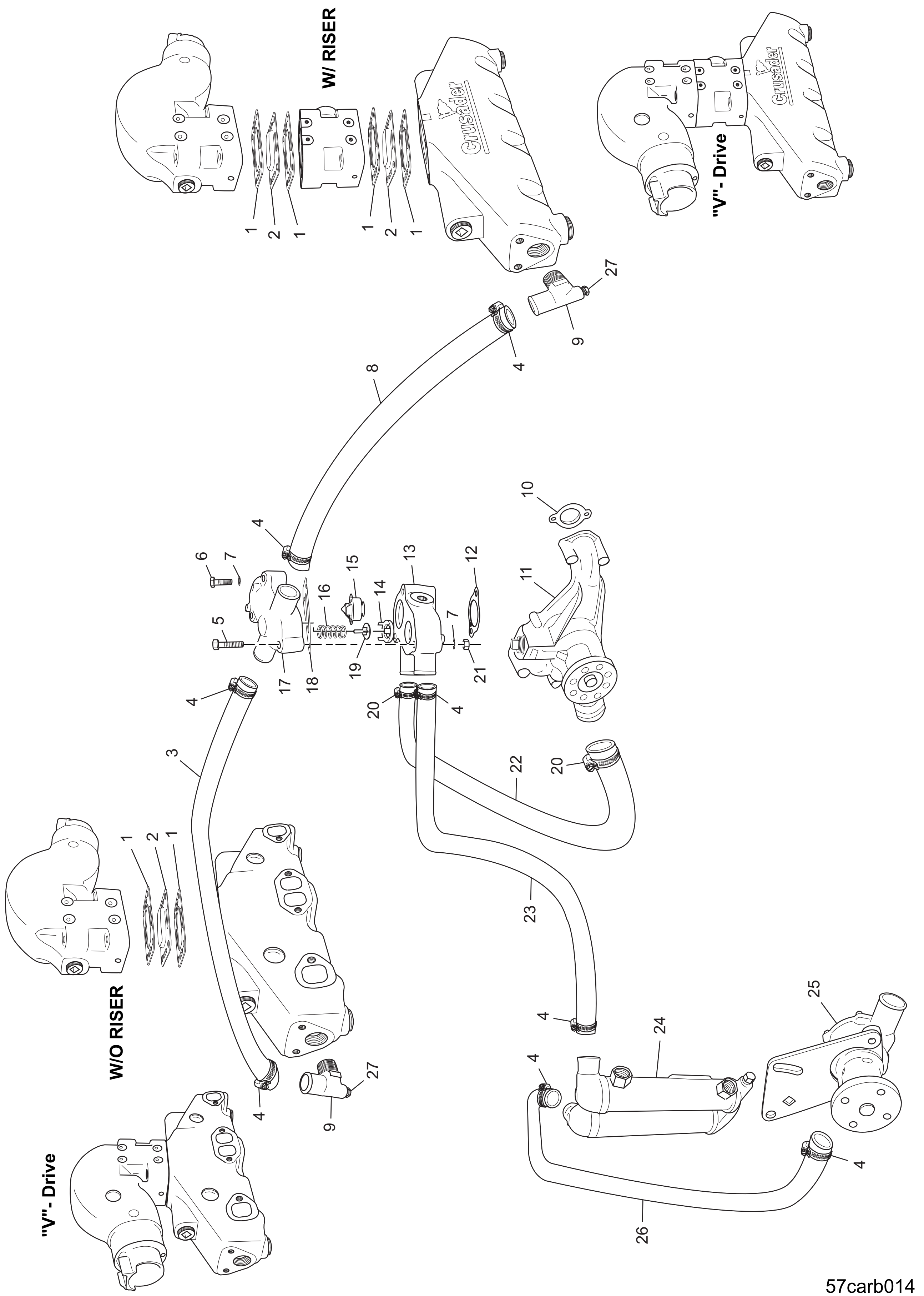


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ACCESSORY DRIVE SYSTEM COMPONENTS (SERPENTINE - RH) (‘04) - FIGURE 18 (cont’d)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
34	RA097007C	**Alternator Assembly** (70 amp serpentine)	1
35	R064010A	**Balancer**, crankshaft	1
36	R065051	**Pulley**, serpentine drive belt	1
37	RS2180	**Lockwasher**, drive belt pulley attaching bolt	3
38	90315100	**Bolt**, drive belt pulley attaching	3
39	R009091	**Bolt**, crankshaft balancer	1
40	R096074	**Washer**, crankshaft balancer	1
N.I.	97224000	**Nut**, alternator wire attaching	2
N.I.	93920000	**Lockwasher**, alternator wire attaching	2
41	R143165A	**Decal**, belt routing, 5.7L (RH)	1
42	98443050	**Bolt**, Idler Pulley attaching	1
43	92940000	**Flat Washer**, Idler Pulley attaching	1
44	R096145	**Flat Washer**, Idler Pulley attaching	1
45	R065054	**Pulley**, Idler	1
46	R062083	**Spacer**, Idler Pulley	1
47	93940000	**Lock Washer**, Idler Pulley attaching	1
48	97440000	**Nut**, Idler Pulley attaching	1
49	R090307	**Bracket**, Idler pulley 5.7 (RH)	1
50	RS2180	**Lock Washer**, Idler bracket attaching	2
51	RS0304	**Bolt**, Idler bracket attaching, upper	1
52	RS0306	**Bolt**, Idler bracket attaching,lower	1
53	R065055	**Pulley**, Alternator (5.X/6.0L), Serpentine	1

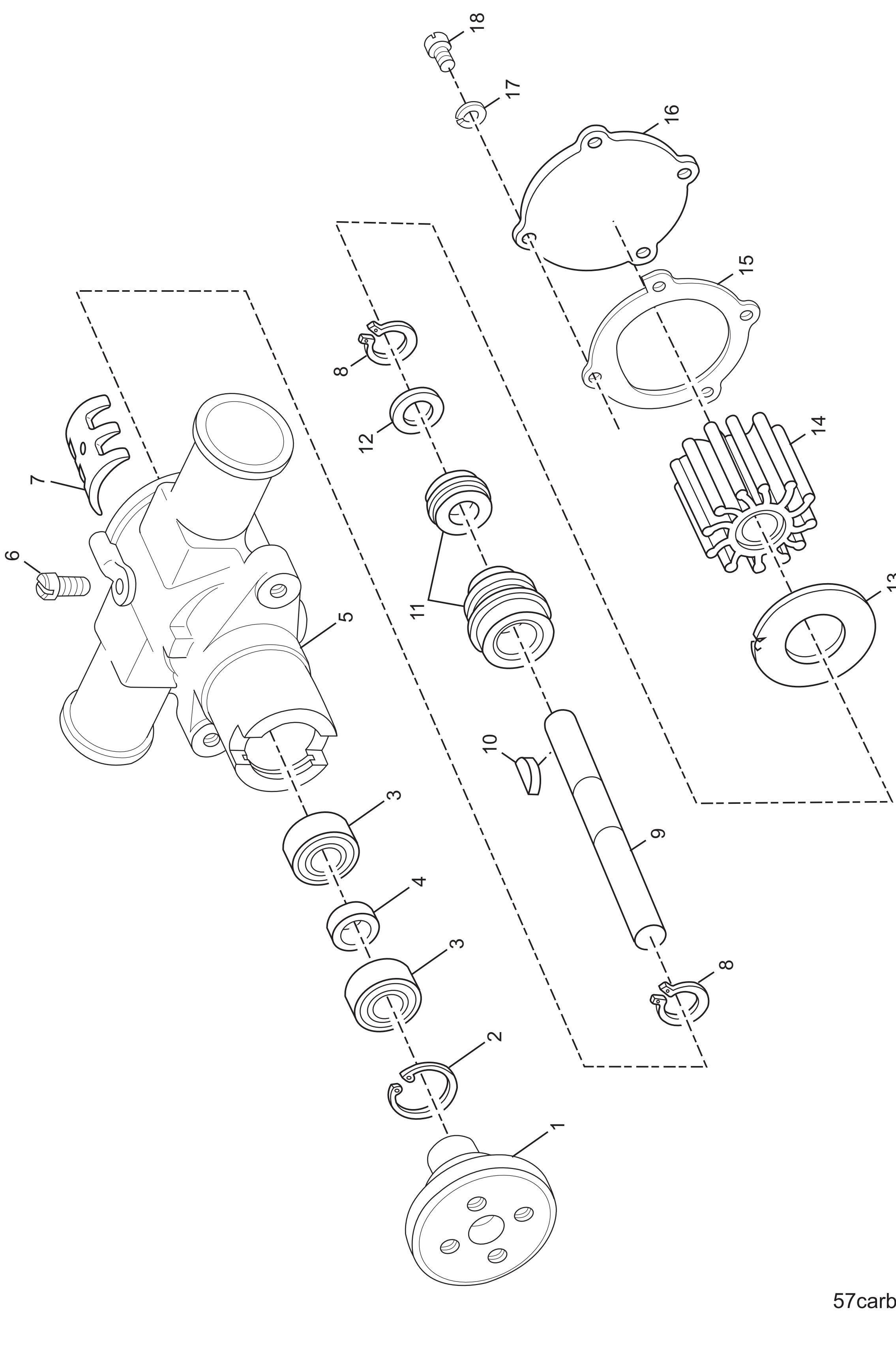
RAW WATER COOLING SYSTEM COMPONENTS (Thru ‘03) - FIGURE 19



RAW WATER COOLING SYSTEM COMPONENTS (Thru ‘03) - FIGURE 19

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	98127	**Gasket**, elbow to riser / elbow to manifold / riser to manifold	4
2	98124A	**Plate**, vented	2
3	18334	**Hose**, thermostat housing to manifold (stbd)	1
4	RS3858	**Clamp**, hose	8
5	RS0314	**Bolt**, thermostat housing (3 1/2”)	1
6	RS3016	**Bolt**, thermostat housing (4”)	2
7	RS2180	**Lockwasher**, thermostat housing bolt	3
8	18333	**Hose**, thermostat housing to manifold (port)	1
9	30624	**Fitting**, 90 degree	2
10	RM0203	**Gasket**, water pump to engine block	2
11	RA057027	**Circulating Pump Assembly**	1
12	96105	**Gasket**, thermostat housing, lower	1
13	98552	**Thermostat Housing**, lower	1
N.I.	RS3551	**Plug**, pipe HX SOC, Brass 3/8	1
14	96065	**Seat**, pressure relief	1
15	R026002	**Thermostat**, coolant (160 degree)	1
16	96686	**Spring**, pressure relief	1
*	22366	**Thermostat Housing Assembly, complete**	1
17	97556	**Thermostat Housing**, upper	1
18	97361	**Gasket**, thermostat housing, upper	1
19	96066	**Valve**, pressure relief	1
20	RS3852	**Clamp**, hose	2
21	RS1028	**Nut**, thermostat housing bolt	1
22	96296	**Hose**, circulating pump to thermostat housing	1
23	97310	**Hose**, U-cooler to thermostat housing	1
24	98123	**U-Cooler**, raw water cooling	1
25	RA057031	**Raw Water Pump Assembly**	1
26	18384	**Hose**, raw water pump to U-cooler	1
27	RS3552	**Plug**, drain	2

RAW WATER COOLING PUMP (BELT-DRIVEN) (Thru ‘03) - FIGURE 20

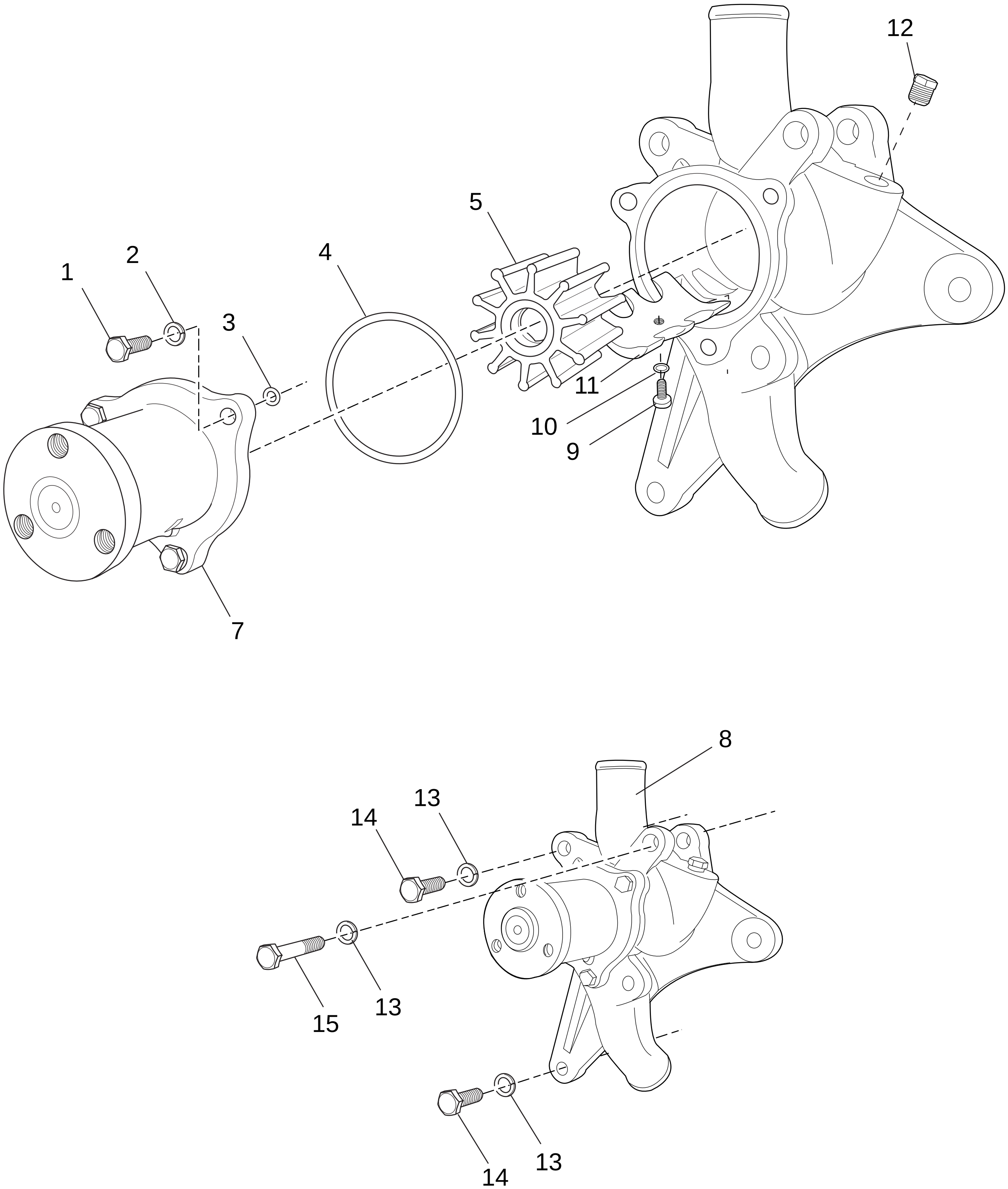


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RAW WATER COOLING PUMP (BELT-DRIVEN) (Thru ‘03) - FIGURE 20

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
*	RA057031	**Raw Water Pump Assembly**	1
1	97176	**Hub**, drive	1
2	20294	**Retainer**, bearing	1
3	40054	**Bearing**, shaft	2
4	40053	**Spacer**, bearing	1
5	40062	**Housing**, water pump	1
6	20298	**Screw**, cam retaining	1
7	20303	**Cam**, eccentric	1
8	20293	**Retainer**, shaft	2
9	40061	**Shaft Assembly**	1
10	20295	**Key**, impeller drive	1
11	40057	**Seal and Seat Assembly**	1
12	40052	**Washer**	1
13	40063	**Plate,** wear	1
14	R061017	**Impeller,** water pump	1
15	RM0269	**Gasket,** rear cover	1
16	40060	**Cover**	1
16	R109055	**Cover,** (pumps March ‘05 and newer)	1
17	40051	**Lockwasher,** cover bolt	4
18	40071	**Bolt,** rear cover attaching	4
		Repair Kits:	
	RP061017	**Impeller Kit** (Includes Impeller and Gasket)	
	40065	**Impeller Kit** (Includes Impeller, Gasket, and Seal and Seat Assembly)	
	40064	**Overhaul Kit,** Major (Includes Impeller, Gasket, Seal and Seat Assembly, Shaft Bearings, and Bearing Retainer)	

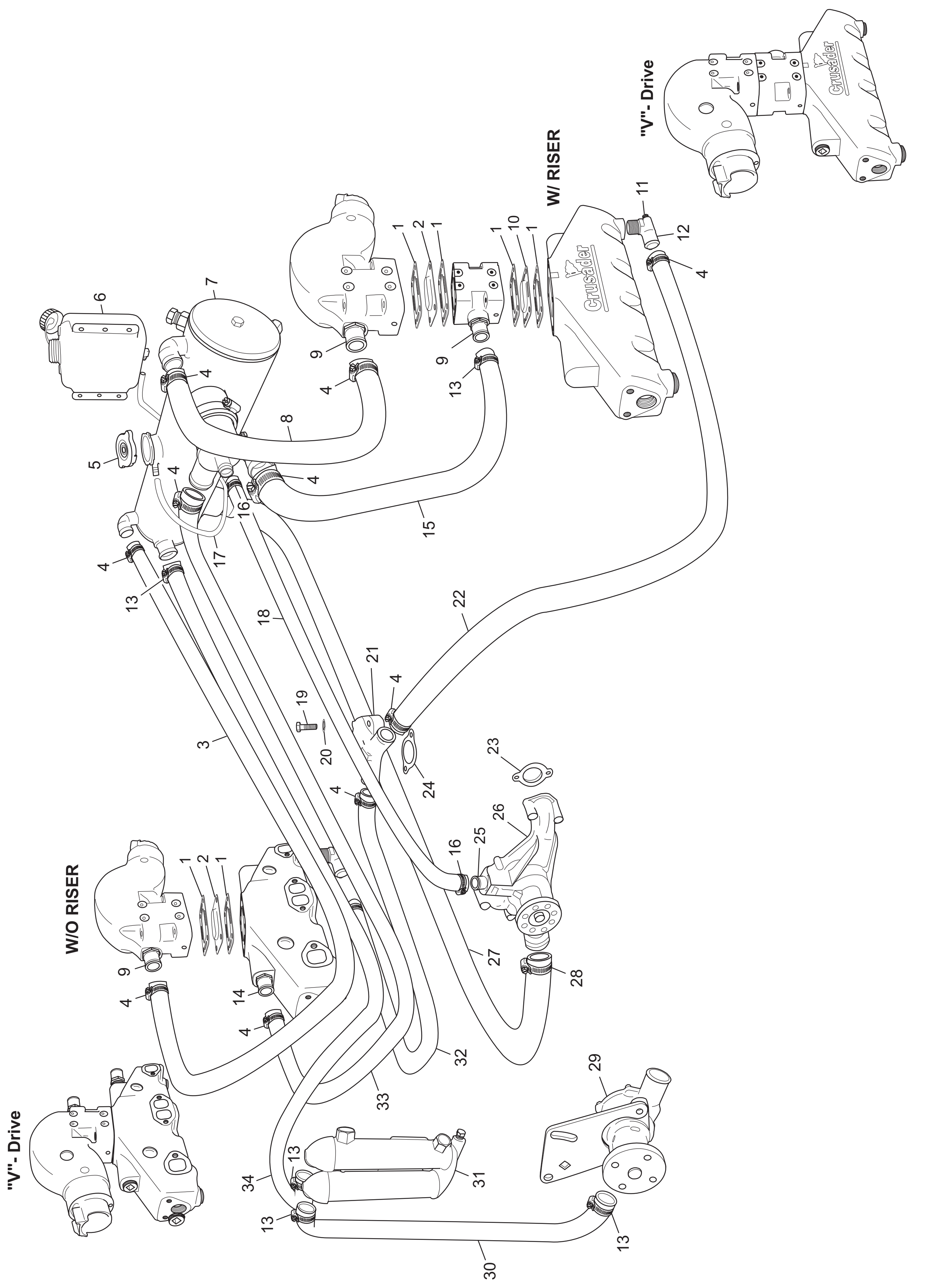
RAW WATER COOLING PUMP (SERPENTINE) (‘04) - FIGURE 21



RAW WATER COOLING PUMP (SERPENTINE) (‘04) - FIGURE 21

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	TBD	**Bolt,** bearing housing attaching	3
2	TBD	**Lockwasher,** bearing housing attaching bolt	3
3	R047243	**O-ring,** bearing housing attaching bolt	3
4	R047242	**O-ring,** bearing housing attaching	1
5	RP061022	**Impeller Kit** (includes O-rings and impeller)	1
6	R057034	**Housing,** raw water pump	1
7	RA134071	**Bearing Housing Assembly**	1
8	RA057034	**Raw Water Pump Assembly**	1
9	TBD	**Bolt,** raw water pump cam	1
10	TBD	**Lockwasher,** raw water pump cam	1
11	R161018	**Cam,** raw water pump	1
12	RS3554	**Plug**, brass 1/8 NPT	1
13	RS2180	**Lockwasher,** raw water pump attaching	3
14	RS0306	**Bolt,** raw water pump attaching	2
15	RS0454	**Bolt,** raw water pump attaching	1

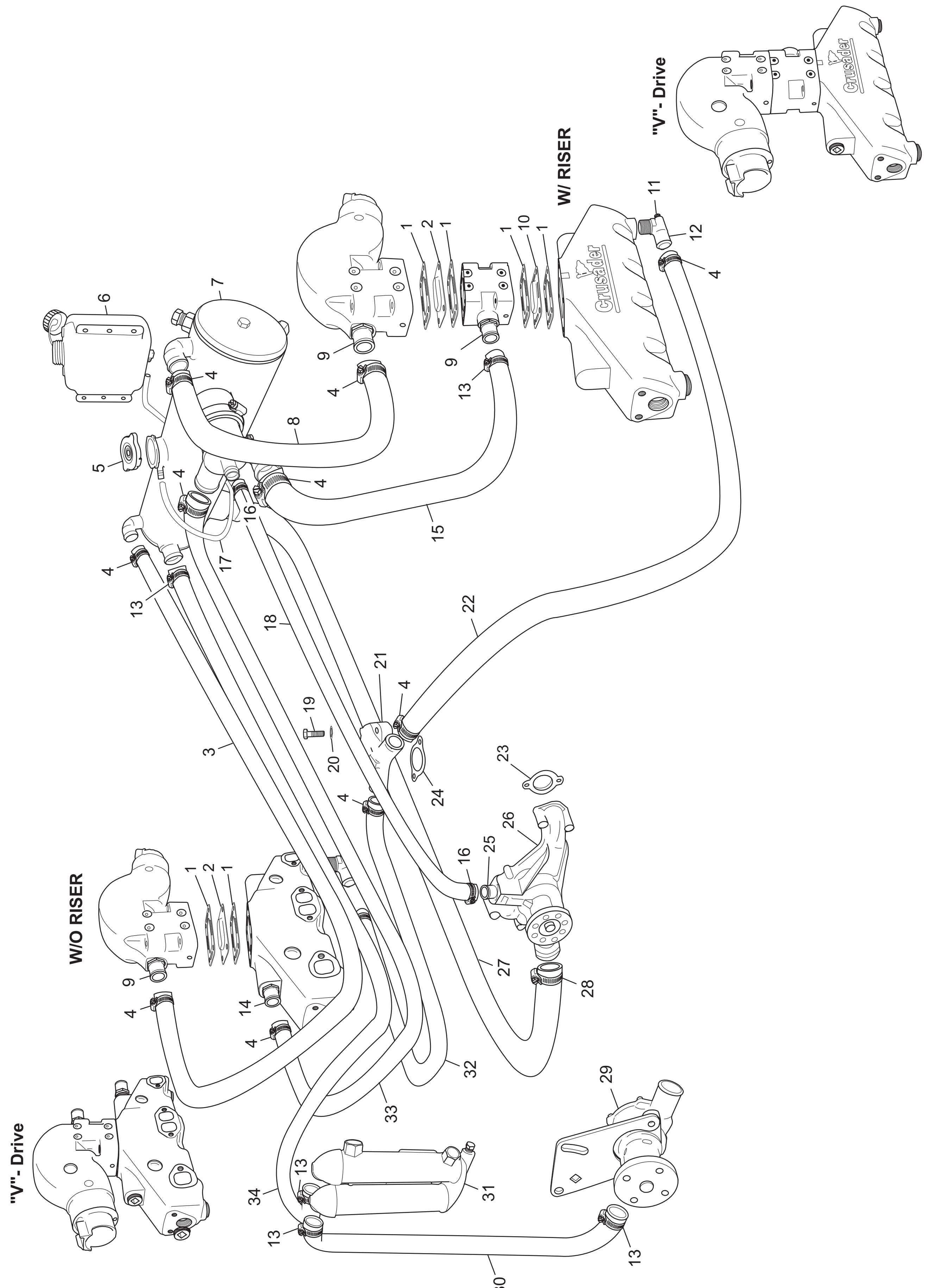
FRESH WATER COOLING SYSTEM COMPONENTS (Thru ‘03) - FIGURE 22



FRESH WATER COOLING SYSTEM COMPONENTS (Thru ‘03) - FIGURE 22

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	98127	**Gasket**, elbow / riser / manifold (*Quantity - 8, w/ 4” riser)	4
2	98124	**Plate**, block-off	2
3	18340	**Hose**, heat exchanger to elbow (direct drive)	2
3	18311	**Hose**, heat exchanger to elbow (v-drive)	2
4	RS3858	**Clamp**, hose (#20) (*Quantity - 10 w/ 4” riser)	12
5	R034006A	**Cap**, coolant fill, heat exchanger, 7 lb.	1
6	R146002	**Bottle**, coolant overflow	1
7	98619	**Heat Exchanger Assembly**	1
8	18340	**Hose**, heat exchanger to elbow (direct drive)	2
8	18311	**Hose**, heat exchanger to elbow (v-drive)	2
9	97911	**Fitting**, straight (3/4” pipe) (*Quantity - 3, w/ 4” riser)	2
10	98124A	**Plate**, vented (used w/ 4” riser)	2
11	RS3552	**Plug**, drain	2
12	30624	**Fitting**, exhaust manifold (90 degree)	2
13	RS3851	**Clamp**, hose (#16) (*Quantity - 6 w/ 4” riser)	4
14	97852	**Fitting**, straight (1” pipe) (*not used w/ 4” riser)	2
N.I.	R024006A	**Fitting**, 90 degree (*used w/ 4” riser - port)	1
15	R045145	**Hose**, t-stat housing to 4” riser (port)	1
N.I.	18307	**Hose**, t-stat housing to manifold (port) w/o 4” riser	1
16	RS3864	**Clamp**, hose 5/8”	2
17	R045139	**Hose**, overflow bottle	AR
18	20806	**Hose**, t-stat housing to circulating pump 5/8” i.d.	AR
19	RS0306	**Bolt**, housing attaching	2
20	RS2180	**Lockwasher**, housing attaching	2
21	97851	**Housing**, coolant distribution	1
22	18333	**Hose**, waterneck to manifold (port)	1
23	RM0266	**Gasket**, circulating pump to engine block	2
24	96105	**Gasket**, housing to intake manifold	1

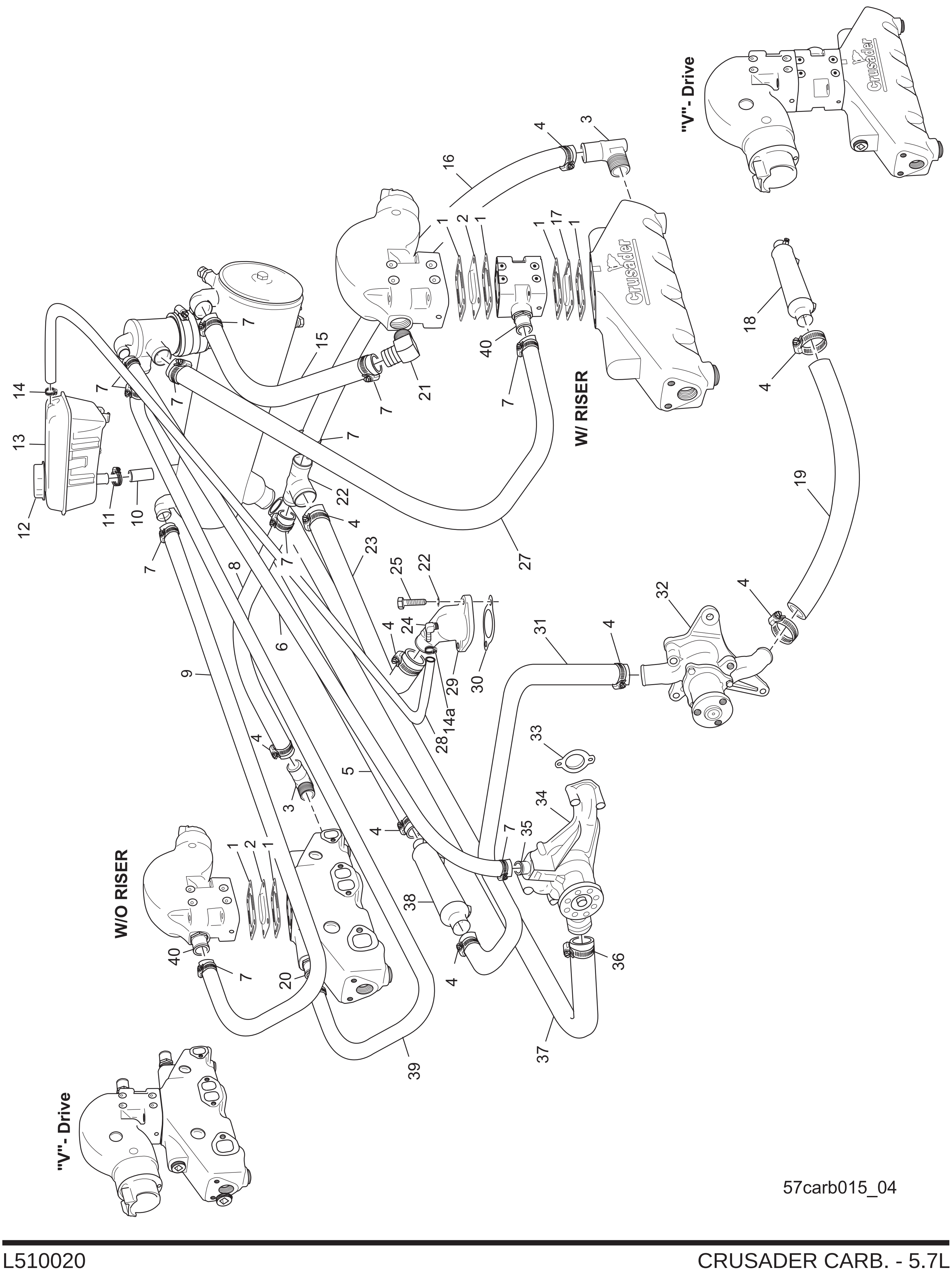
FRESH WATER COOLING SYSTEM COMPONENTS (Thru ‘03) - FIGURE 22 (cont’d)



FRESH WATER COOLING SYSTEM COMPONENTS (Thru ‘03) - FIGURE 22 (cont’d)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
25	23555	**Fitting**, 5/8” hose barb	1
26	RA057027	**Circulating Pump Assembly**	1
N.I.	RS3554	**Plug**, HX HD 1/8” pipe, brass	1
27	18306	**Hose**, heat exchanger to circulating pump	1
28	RS3855	**Clamp**, hose (#32)	2
29	RA057031	**Raw Water Pump Assembly**	1
30	18384	**Hose**, raw water pump to U-cooler	1
31	98570	**U-Cooler**, engine and transmission oil	1
32	18334	**Hose**, waterneck to manifold (stbd)	1
33	R045137	**Hose**, t-stat housing to manifold (stbd) w/o 4” riser	1
N.I.	18413	**Hose**, t-stat housing to 4” riser (stbd)	1
34	18390	**Hose**, U-cooler to heat exchanger	1

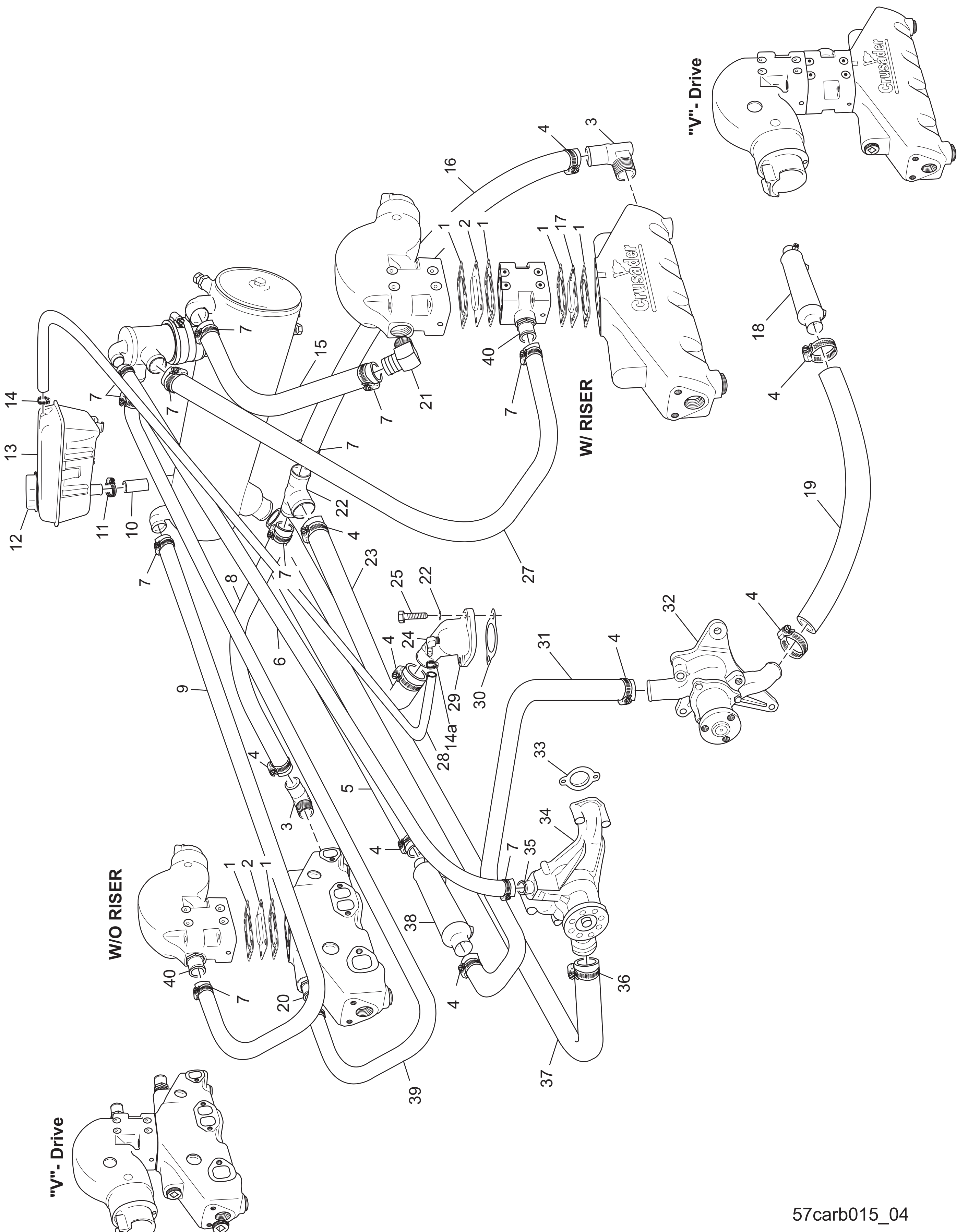
FRESH WATER COOLING SYSTEM COMPONENTS (‘04) - FIGURE 23



FRESH WATER COOLING SYSTEM COMPONENTS (‘04) - FIGURE 23

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	98127	**Gasket**, elbow / riser / manifold (*Quantity - 8, w/ 4” riser)	4
2	98124	**Plate**, block-off	2
3	30624	**Fitting**, exhaust manifold (90 degree) (1” NPT X 1-1/4” hose)	2
N.I.	RS3552	**Plug**, drain	2
4	RS3858	**Clamp**, hose	10
5	18406	**Hose**, transmission cooler to heat exchanger	1
6	R045086	**Hose**, t-stat housing to circulating pump 5/8” i.d.	AR
7	RS3851	**Clamp**, hose	12
8	R045136B	**Hose**, coolant tee to exhaust manifold (starboard)	1
9	18340	**Hose**, heat exchanger to elbow (starboard) (direct drive)	1
9	TBD	**Hose**, heat exchanger to elbow (starboard) (v-drive)	1
10	R045153	**Hose**, degas bottle to heat exchanger	1
11	RS3854	**Clamp**, hose	2
12	R034045	**Cap**, degas bottle	1
13	R146001	**Bottle**, degas	1
14	R127087	**Clamp**, hose	1
14a	RS3870	**Clamp**, hose	1
15	R045165	**Hose**, heat exchanger to elbow (Port) (direct drive)	1
15	TBD	**Hose**, heat exchanger to elbow (Port) (v-drive)	1
16	R045136	**Hose**, coolant tee to exhaust manifold (port)	1
17	98124A	**Plate**, vented (used w/ 4” riser)	2
18	R147049	**Cooler**, engine oil	1
19	R045159	**Hose**, engine oil cooler to raw water pump	1
20	R024212	**Fitting**, straight (1” NPT X 1-1/4” hose)	3
21	R024006A	**Fitting**, 90 degree (3/4” NPT X 1” hose)	1
22	R024054C	**Tee**, coolant, 1-1/4 x 1 x 1	1
23	R045144A	**Hose**, water neck to coolant tee	1
24	R024055	**Fitting**, 90 degree, water neck	1
25	RS0304	**Bolt**, water neck attaching	2
26	RS2180	**Lockwasher**, water neck attaching	2

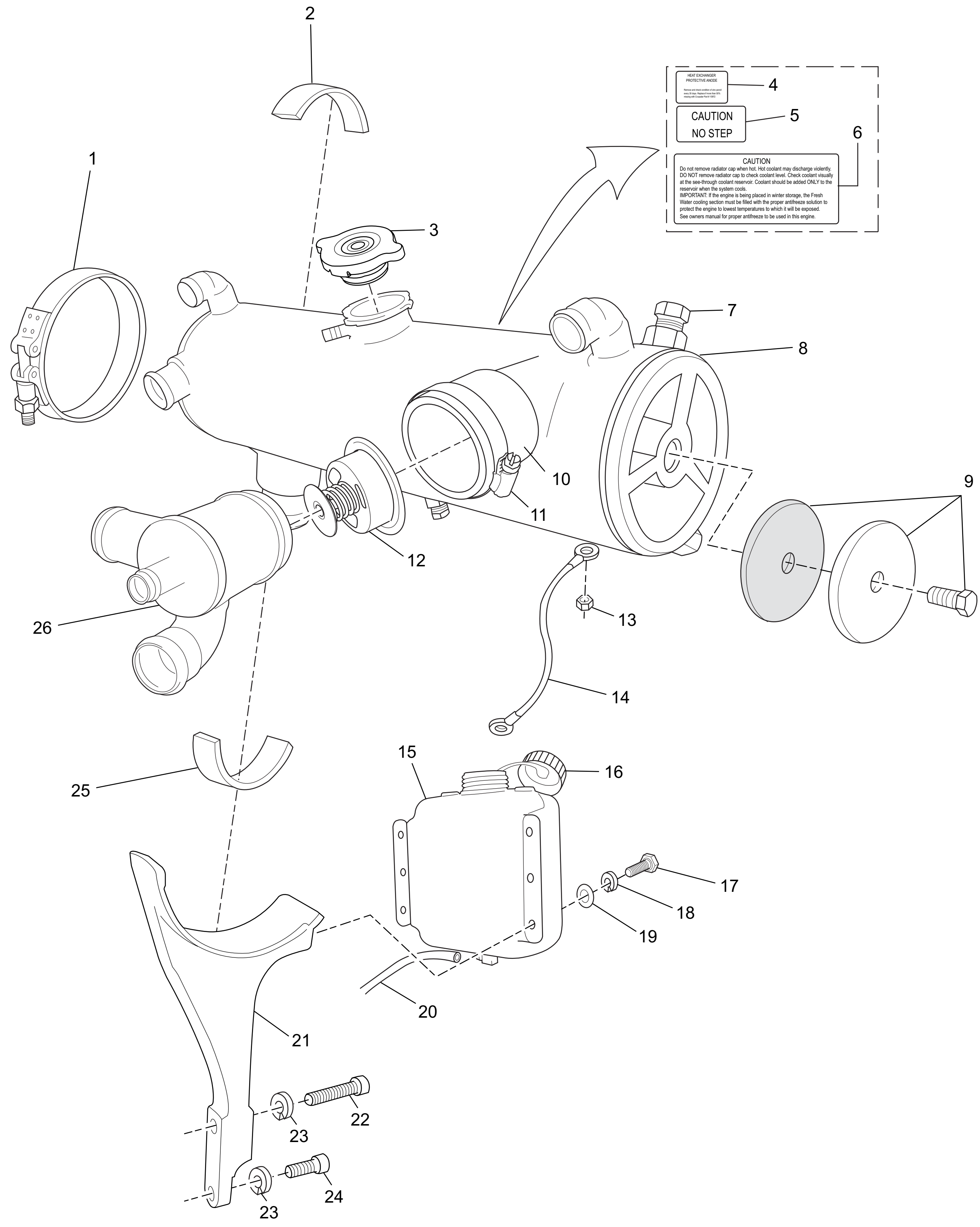
FRESH WATER COOLING SYSTEM COMPONENTS (‘04) - FIGURE 23 (cont’d)



FRESH WATER COOLING SYSTEM COMPONENTS (‘04) - FIGURE 23 (cont’d)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
27	TBD	**Hose**, t-stat housing to 4” riser (port)	1
N.I.	R045157A	**Hose**, t-stat housing to manifold w/o 4” riser (port)	1
28	R045132	**Hose**, degas bottle to water neck fitting	AR
29	R025015B	**Water Neck**	1
30	96105	**Gasket**, water neck	1
31	R045166	**Hose**, raw water pump to transmission cooler	1
32	RA057034	**Raw Water Pump**	1
33	RM0266	**Gasket**, water pump to engine block	2
34	RA057027	**Water Pump Assembly**	1
35	23555	**Fitting**, 5/8” hose barb	2
36	RS3852	**Clamp**, hose (#32)	2
37	R045146A	**Hose**, heat exchanger to circulating pump	1
38	R147006	**Cooler**, transmission oil	1
39	R045157A	**Hose**, t-stat housing to manifold w/o 4” riser (starboard)	1
N.I.	TBD	**Hose**, t-stat housing to 4” riser (starboard)	1
40	R024073	**Fitting**, straight (3/4” NPT X 1” hose)	1

HEAT EXCHANGER and COMPONENTS (Thru ‘03) - FIGURE 24

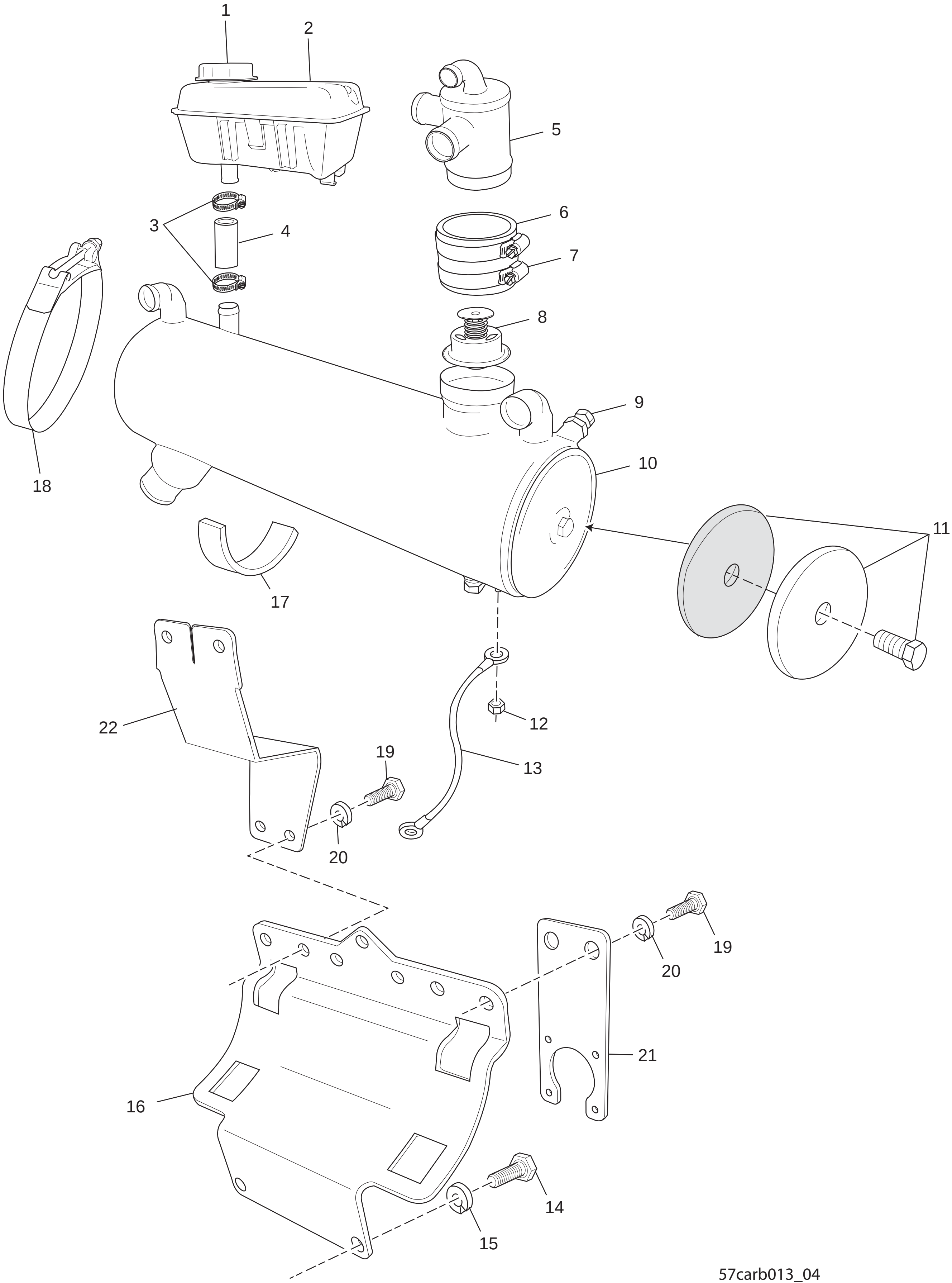


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HEAT EXCHANGER and COMPONENTS (Thru ‘03) - FIGURE 24

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R171009	**Clamp**, exchanger mounting	2
2	R094041	**Isolator**, top	2
3	R034006A	**Cap**, coolant fill, heat exchanger, 7 lb.	1
NI	R143145	**Decal**, fill cap	1
3	RK034006A	**Fill Cap W/Decal**	1
4	23627	**Decal**, exchanger	1
5	22847	**Decal**, exchanger	1
6	23657	**Decal**, exchanger	1
7	R168008	**Zinc**, sacrificial	1
8	98619	**Heat Exchanger Assembly**	1
9	22164	**End Cap Kit**, exchanger	AR
10	R045162	**Hose**, t-stat housing to heat exchanger	1
11	RS3860	**Clamp**, hose	2
12	R026007	**Thermostat**, (170 degree)	1
13	RS1078	**Nut**, w/lockwasher, ground wire stud	1
14	R101013	**Wire**, grounding	1
15	R146002	**Bottle**, coolant overflow	1
16	23527	**Cap**, coolant overflow bottle	1
17	RS0280	**Bolt**, coolant overflow mounting (3/4”)	2
18	RS2179	**Lockwasher**, mounting bolt	2
19	92200000	**Washer**, mounting bolt	2
20	R045139	**Hose**, overflow	1
21	R090255	**Bracket**, heat exchanger (right hand)	1
21(NI)	R090254	**Bracket**, heat exchanger (left hand)	1
22	90368175	**Bolt**,heat exchanger bracket (long)	2
23	RS2180	**Lockwasher**, heat exchanger bracket bolt	4
24	90368100	**Bolt**,heat exchanger bracket (short)	2
25	R094040	**Isolator**, bottom	2
26	98202	**Housing**, thermostat, copper	1

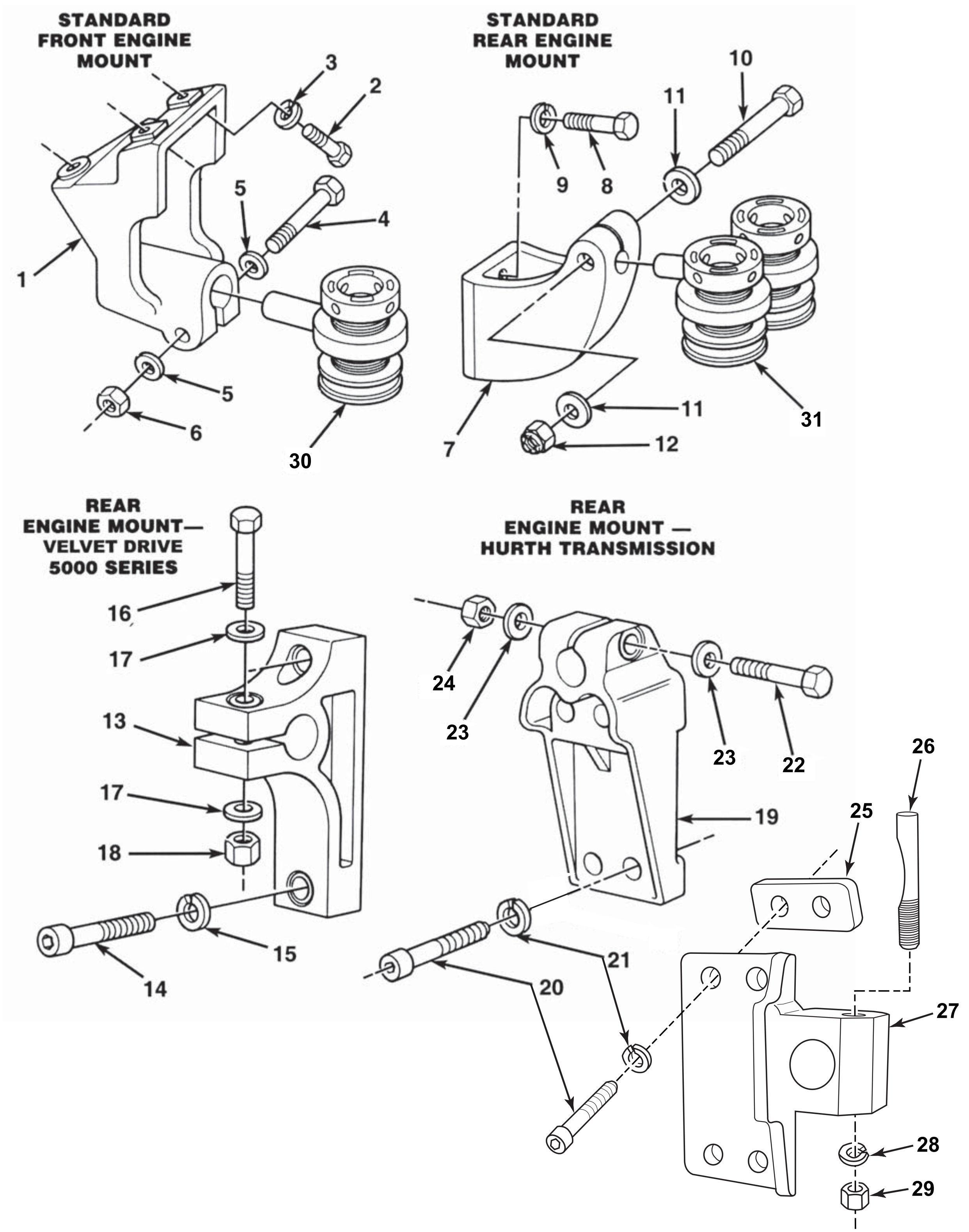
HEAT EXCHANGER and COMPONENTS ('04) - FIGURE 25



HEAT EXCHANGER and COMPONENTS (‘04) - FIGURE 25

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R034045	**Cap**, degas bottle	1
2	R146001	**Bottle**, degas	1
NI	R143171	**Decal**, spec 5.7L carburetor	1
NI	R143153	**Decal**, coolant fill	1
3	RS3872	**Clamp**, hose	2
4	R045153	**Hose**, degas bottle to heat exchanger	1
5	R025037	**Housing**, thermostat	1
6	R045162	**Hose**, thermostat housing to heat exchanger	1
7	RS3860	**Clamp**, hose	2
8	R026007	**Thermostat**, 170 degree	1
9	R168005	**Anode**, sacrificial zinc	AR
10	RA147048	**Heat Exchanger Assembly**	1
11	23540	**End Cap Kit**, exchanger	AR
12	RS1078	**Nut**, ground wire stud	1
13	R101013	**Wire**, grounding	1
14	90368100	**Bolt**, heat exchanger bracket attaching	2
15	RS2180	**Lockwasher**, mounting bolt	2
16	R090258	**Bracket**, heat exchanger	1
17	R094040	**Isolator**, rubber, w/adhesive	2
17	R094041	**Isolator**, rubber	2
18	R171009	**Clamp**, exchanger mounting	2
19	RS0280	**Bolt**, bracket attaching	4
20	RS2179	**Lockwasher**, bracket attaching	4
21	R090291	**Bracket**, 10-pin connector	1
22	R090311	**Bracket**, degas bottle	1

ENGINE and TRANSMISSION MOUNTS - FIGURE 26

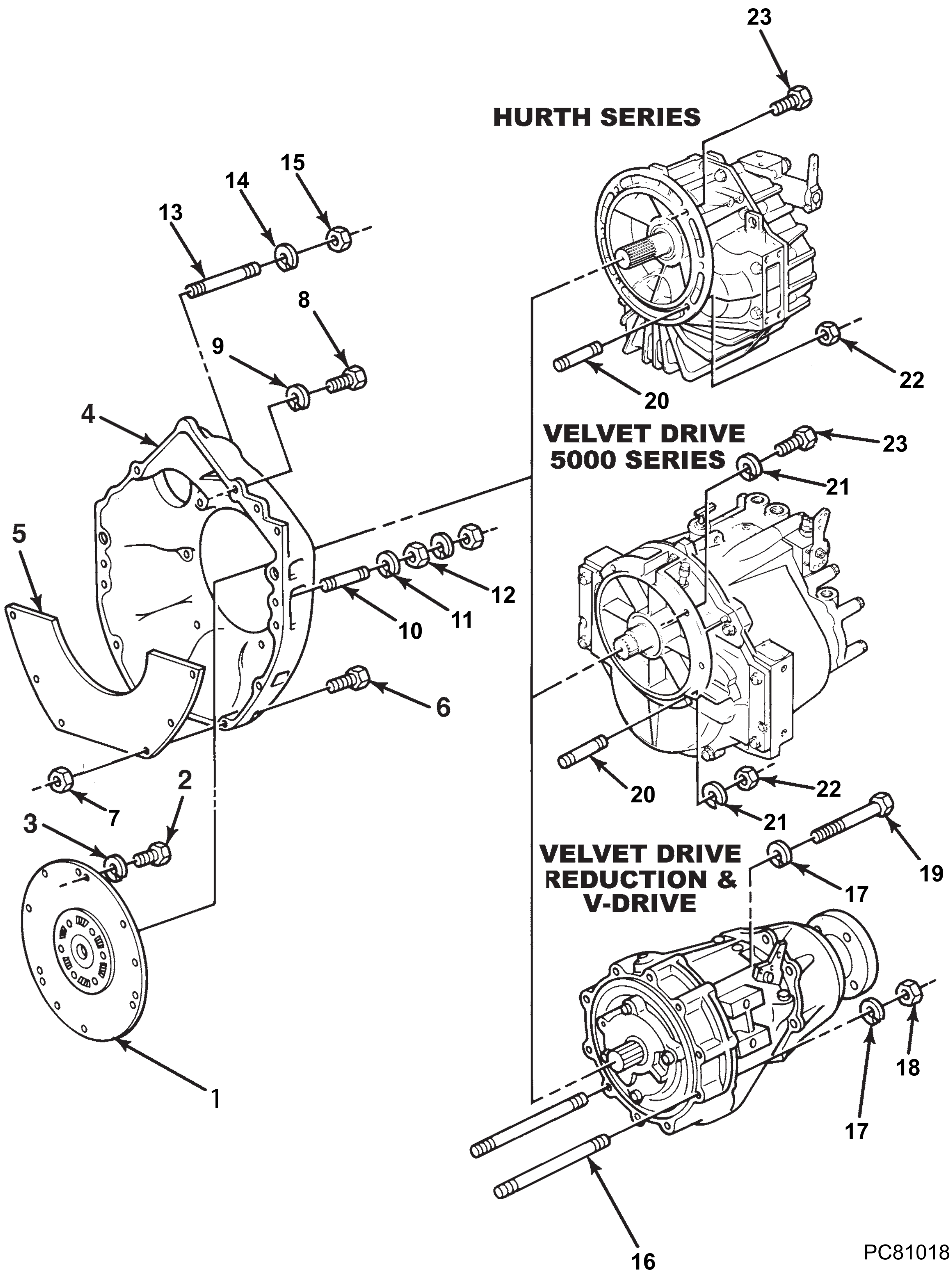


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ENGINE and TRANSMISSION MOUNTS - FIGURE 26

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
		****Standard Front Engine Mount****	
1	97938	**Bracket**, engine mounting (front)	2
2	RS0305	**Bolt**, socket head	4
2	RS3442	**Stud**	2
N.S.	RS1028	**Nut**, attaching	2
3	RS2180	**Lockwasher**, bracket mounting bolt	6
4	90318225	**Bolt**, trunnion shaft (2 1/4”)	2
5	92300000	**Washer**, trunnion bolt	4
6	95310300	**Nut**, trunnion bolt - locking	2
		****Standard Rear Engine Mount****	
7	97917	**Bracket**, engine mounting (Rear)	2
8	RS0328	**Bolt**, bracket to transmission (1 1/4”)	4
9	RS2181	**Lockwasher**, bracket mounting bolt	4
10	90318325	**Bolt**, trunnion shaft (3 1/4”)	2
11	92300000	**Washer**, trunnion bolt	4
12	95310300	**Nut**, trunnion bolt - locking	2
		****Rear Engine Mount - Velvet Drive 5000 Series****	
13	98224	**Bracket**, transmission mounting (Starboard)	1
13	98225	**Bracket**, transmission mounting (Port)	1
14	RS6336	**Bolt**, bracket to transmission (12 mm x 60 mm)	4
15	RS7071	**Lockwasher** (12 mm)	4
16	90318325	**Bolt**, trunnion shaft (3 1/4”)	2
17	92300000	**Washer**, trunnion bolt	4
18	95310300	**Nut**, trunnion bolt - locking	2
		****Rear Engine Mount - Hurth Transmission****	
19	R090174A	**Bracket**, engine mounting (rear)	2
20	RS6331	**Bolt**, bracket to transmission (12 mm x 35 mm)	4
20	RS6336	**Bolt**, bracket to transmission (12 mm x 60 mm)	4
21	RS7071	**Lockwasher** (12 mm)	8
22	90318325	**Bolt**, trunnion shaft (3 1/4”)	2
23	92300000	**Washer**, trunnion bolt	4
24	95310300	**Nut**, trunnion bolt - locking	2
25	R109049	**Spacer**, bracket to transmission	2
26	R095020	**Bolt**, trunnion shaft	2
27	R090217	**Bracket**, engine mounting (port)	1
27	R090218	**Bracket**, engine mounting (starboard)	1
28	RS2181	**Lockwasher**, trunnion bolt	2
29	RS1529	**Nut**, trunnion bolt - locking	2
		****Mount Supports****	
30	97926	**Mount**, engine support (single front)	2
31	97905	**Mount**, engine support (dual rear)	2

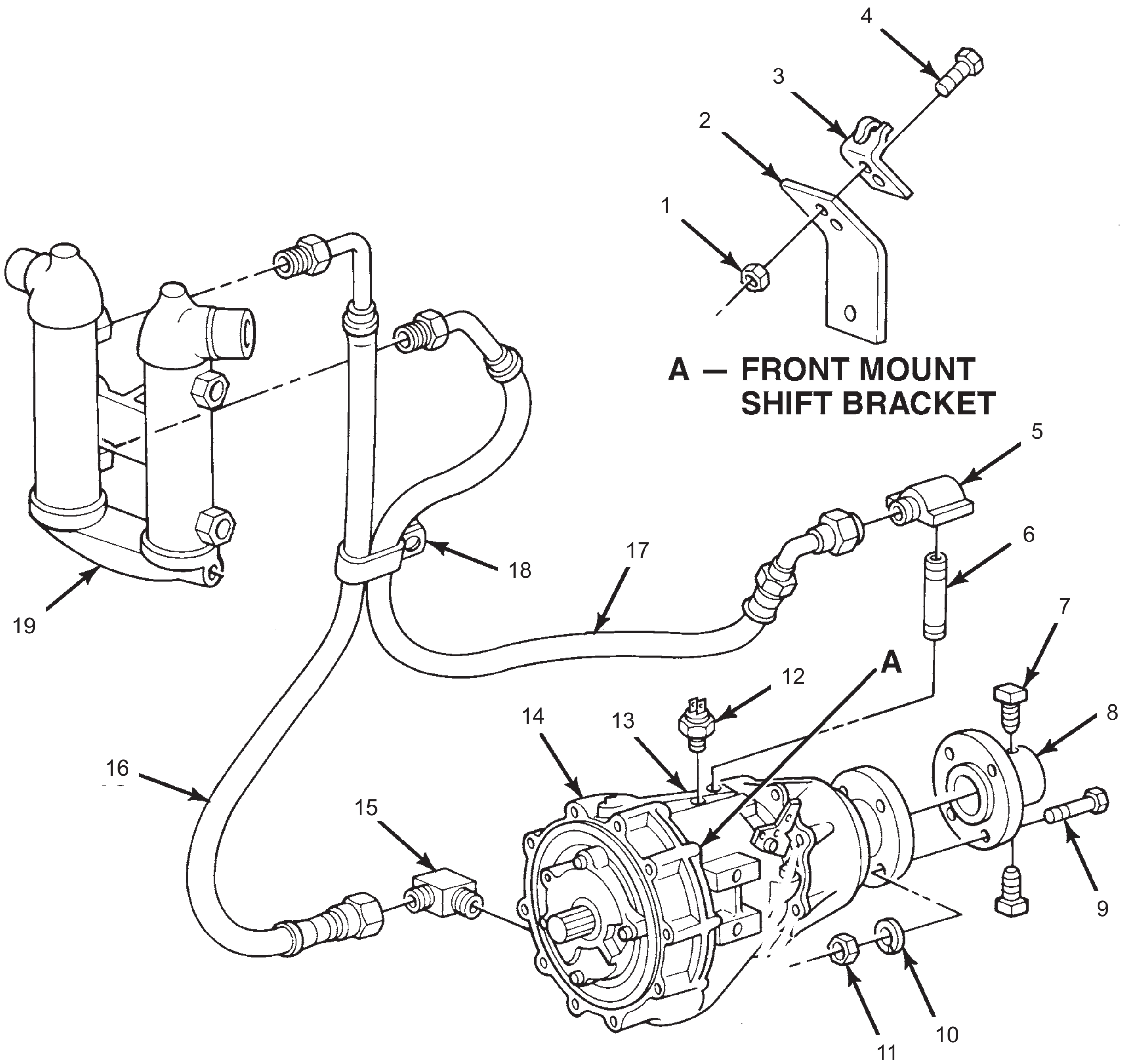
BELL HOUSING ASSEMBLY - FIGURE 27



BELL HOUSING ASSEMBLY - FIGURE 27

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	R140019	**Drive Damper Assembly**, (Hurth - LH Only)	1
1	98511	**Drive Damper Assembly**, (71C/72C - All RH rotation)	1
2	R009092	**Bolt**, damper to flywheel (1”)	6
3	RS2180	**Lockwasher**, damper bolt	6
4	R142014	**Bellhousing**, flywheel	1
5	R019008	**Cover**, bellhousing (use w/top mount starter)	1
5	R019008A	**Cover**, bellhousing (use w/bottom mount starter)	1
NI	R019010	**Cover**, top mount starter (used w/R019008A)	1
NI	RS0327	**Bolt**, dust cover attaching	2
NI	RS2181	**Lockwasher**, dust cover attaching	2
6	RS0256	**Bolt**, cover to bellhousing (1”)	5
6	90105125	**Bolt**, cover to bellhousing (1 1/4”)	1
7	RS1078	**Nut**, cover bolt	6
8	RS0305	**Bolt**, bellhousing to block	2
8	99443030	**Bolt**, SHCS (behind starter)	1
9	RS2180	**Lockwasher**, bellhousing bolt	2
10	R031033	**Stud**, bellhousing mounting	2
11	RS2180	**Lockwasher**, mounting stud	4
12	RS1028	**Nut**, mounting stud	4
13	R031033	**Stud**, starter mounting (1 5/8”)	2
14	RS2181	**Lockwasher**, starter mounting stud	2
15	RS1029	**Nut**, starter mounting stud	2
		****Velvet Drive Reduction & “V”-Drive****	
16	96541	**Stud**, transmission mounting (4”)	2
17	RS2181	**Lockwasher**, transmission mounting	6
18	RS1029	**Nut**, transmission mounting stud	2
19	RS0337	**Bolt**, transmission mounting	4
		****Velvet Drive 5000 & Hurth Gears****	
20	R031018	**Stud**, transmission mounting (1 5/8”)	2
21	RS2180	**Lockwasher**, transmission mounting	6
22	RS1029	**Nut**, transmission mounting stud	2
23	RS0329	**Bolt**, transmission mounting	4

TRANSMISSION AND RELATED COMPONENTS (Thru ‘03) (VELVET DRIVE IN-LINE) - FIGURE 28

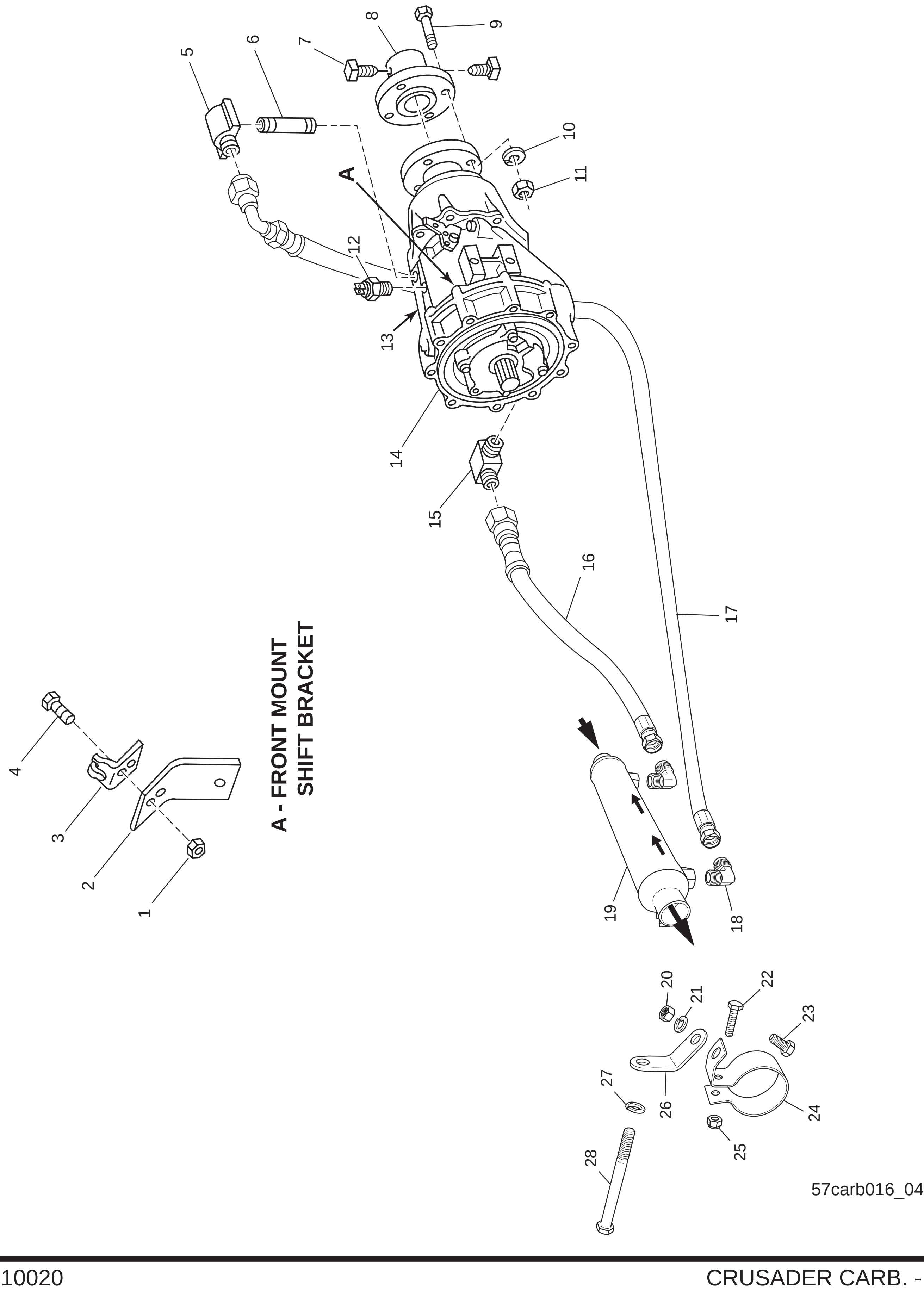


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TRANSMISSION AND RELATED COMPONENTS (Thru ‘03) (VELVET DRIVE IN-LINE) - FIGURE 28

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS2055	**Nut,** attaching bolt	2
2	96341	**Shift Bracket** (front mount)	1
3	R090086	**Cable Clip**, single cable	1
N.I.	22232	**Cable Clip**, dual cable clip (not shown)	OPT
4	RS5122	**Bolt,** clip attaching (1/2”)	2
5	R024008	**Elbow,** hose - transmission (90 degree)	1
6	RS4674	**Nipple,** pipe (3”)	1
7	2000090	**Screw,** set - coupler	2
8	R148001	**Coupler,** prop shaft (1” shaft)	OPT
8	R148002	**Coupler,** prop shaft (1 1/8” shaft)	OPT
8	R148003	**Coupler,** prop shaft (1 1/4” shaft)	OPT
8	R148004	**Coupler,** prop shaft (1 3/8” shaft)	OPT
8	R148005	**Coupler,** prop shaft (1 1/2” shaft)	OPT
8	R148007	**Coupler,** prop shaft (1 3/4” shaft)	OPT
8	R148008	**Coupler,** prop shaft (2” shaft)	OPT
9	22136	**Bolt,** coupling (1 1/2”)	4
10	RS2181	**Lockwasher,** coupling bolt	4
11	RS1529	**Nut,** coupling bolt	4
12	R020037	**Sender,** temperature alarm	1
13	R153002	**Switch Kit,** neutral start (not shown)	1
13A	25542	**Switch & O-Ring Assembly** (not shown)	1
14	RA157001	**Transmission** (71C, 1:1 Direct Drive)	1
14	RA157002	**Transmission** (71C, 1.52:1 Reduction)	1
14	RA157003	**Transmission** (72C, 1:1 Direct Drive)	1
14	RA157004	**Transmission** (72C, 1.52:1 Reduction)	1
14	RA157004A	**Transmission** (1.88:1 Reduction)	1
14	RA157004D	**Transmission** (2.57:1 Reduction)	1
14	RA157004E	**Transmission** (2.91:1 Reduction)	1
15	R024010	**Elbow,** hose - transmission (90 degree)	1
16	18200	**Hose Assembly,** cooler to transmission	1
17	18201	**Hose Assembly,** transmission to cooler	1
18	R127099	**Clamp,** strap	1
19	98570	**U-Cooler Assembly**, transmission and engine oil	1

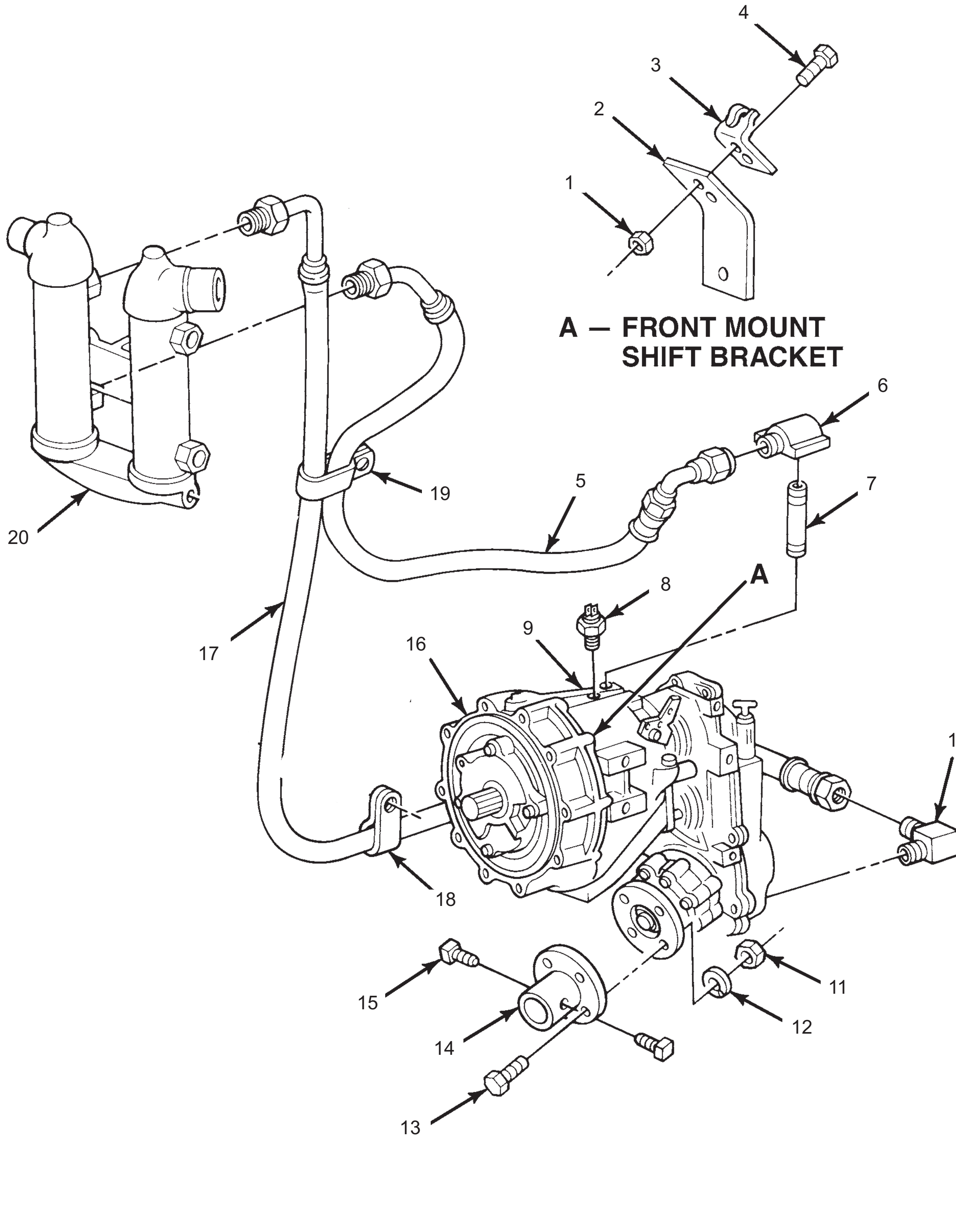
TRANSMISSION AND RELATED COMPONENTS (‘04) (VELVET DRIVE IN-LINE) - FIGURE 29



TRANSMISSION AND RELATED COMPONENTS (‘04) (VELVET DRIVE IN-LINE) - FIGURE 29

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS2055	**Nut,** attaching bolt	2
2	96341	**Shift Bracket** (front mount)	1
3	R090086	**Cable Clip**, single cable	1
N.I.	22232	**Cable Clip**, dual cable clip (not shown)	OPT
4	RS5122	**Bolt,** clip attaching (1/2”)	2
5	R024008	**Elbow,** hose - transmission (90 degree)	1
6	RS4674	**Nipple,** pipe (3”)	1
7	2000090	**Screw,** set - coupler	2
8	R148001	**Coupler,** prop shaft (1” shaft)	OPT
8	R148002	**Coupler,** prop shaft (1 1/8” shaft)	OPT
8	R148003	**Coupler,** prop shaft (1 1/4” shaft)	OPT
8	R148004	**Coupler,** prop shaft (1 3/8” shaft)	OPT
8	R148005	**Coupler,** prop shaft (1 1/2” shaft)	OPT
8	R148007	**Coupler,** prop shaft (1 3/4” shaft)	OPT
8	R148008	**Coupler,** prop shaft (2” shaft)	OPT
9	22136	**Bolt,** coupling (1 1/2”)	4
10	RS2181	**Lockwasher,** coupling bolt	4
11	RS1529	**Nut,** coupling bolt	4
12	R020037	**Sender,** temperature alarm	1
13	R153002	**Switch Kit,** neutral start (not shown)	1
13A	25542	**Switch & O-Ring Assembly** (not shown)	1
14	RA157003	**Transmission** (1:1 Direct Drive)	1
14	RA157004	**Transmission** (1.52:1 Reduction)	1
14	RA157004A	**Transmission** (1.88:1 Reduction)	1
14	RA157004D	**Transmission** (2.57:1 Reduction)	1
14	RA157004E	**Transmission** (2.91:1 Reduction)	1
15	R024010	**Elbow,** hose - transmission (90 degree)	1
16	18200	**Hose Assembly,** cooler to transmission	1
17	18201	**Hose Assembly,** transmission to cooler	1
18	R024010	**Fitting,** 90 degree	2
19	R147006	**Cooler Assembly**, transmission oil	1
20	RS1028	**Nut**, cooler bracket attaching	1
21	RS2180	**Lockwasher**, cooler bracket attaching	1
22	RS0256	**Bolt**, cooler bracket attaching	1
23	RS0302	**Bolt**, cooler bracket attaching	1
24	R090010	**Bracket**, transmission cooler mounting	1
25	RS2058	**Nut**, cooler bracket attaching	1
26	R090304	**Bracket**, transmission cooler attaching	1
27	RS2180	**Lockwasher**, cooler bracket mounting	1
28	RS0316	**Bolt**, cooler bracket mounting (exhaust manifold bolt)	1

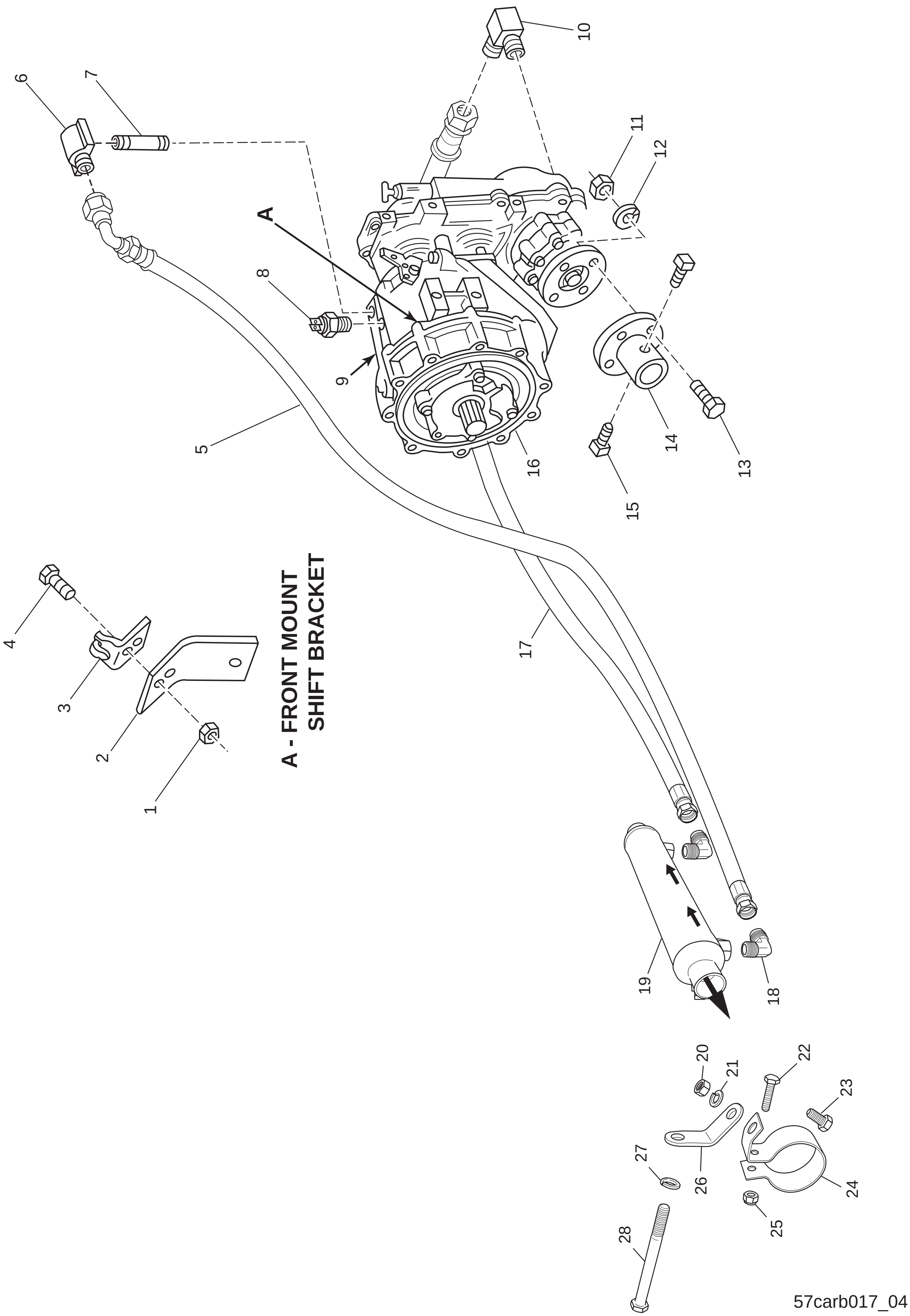
TRANSMISSION AND RELATED COMPONENTS (Thru ‘03) (VELVET DRIVE “V”-DRIVE) - FIGURE 30



TRANSMISSION AND RELATED COMPONENTS (Thru ‘03) (VELVET DRIVE “V”-DRIVE) - FIGURE 30

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS2055	**Nut**, attaching bolt	2
2	96341	**Shift Bracket** (front mount)	1
3	R090086	**Cable Clip**, single cable	1
3	22232	**Cable Clip**, dual cable clip (not shown)	OPT
4	RS5122	**Bolt**, clip attaching (1/2”)	2
5	18201	**Hose Assembly**, transmission to cooler	1
6	R024008	**Elbow**, hose - transmission (90 degree)	1
7	RS4674	**Nipple**, pipe (3”)	1
8	R020037	**Sender**, temperature alarm	1
9	R153002	**Switch Kit**, neutral start (not shown)	1
N.I.	25542	**Switch & O-Ring Assembly** (not shown)	1
10	R024010	**Elbow**, hose - transmission (90 degree)	1
11	RS1529	**Nut**, coupling bolt	4
12	RS2181	**Lockwasher**, coupling bolt	4
13	22136	**Bolt**, coupling (1 1/2”)	4
14	R148001	**Coupler**, prop shaft (1” shaft)	OPT
14	R148002	**Coupler**, prop shaft (1 1/8” shaft)	OPT
14	R148003	**Coupler**, prop shaft (1 1/4” shaft)	OPT
14	R148004	**Coupler**, prop shaft (1 3/8” shaft)	OPT
14	R148005	**Coupler**, prop shaft (1 1/2” shaft)	OPT
14	R148007	**Coupler**, prop shaft (1 3/4” shaft)	OPT
14	R148008	**Coupler**, prop shaft (2” shaft)	OPT
15	2000090	**Screw**, set - coupler	2
16	RA156002B	**Transmission** (1.51:1 Reduction)	1
16	RA156002D	**Transmission** (1.99:1 Reduction)	1
16	RA156002E	**Transmission** (2.49:1 Reduction)	1
17	18201	**Hose Assembly**, cooler to transmission	1
18	20247	**Clamp,** strap	1
19	R127099	**Clamp,** strap	1
20	98570	**U-Cooler Assembly**, transmission and engine oil	1

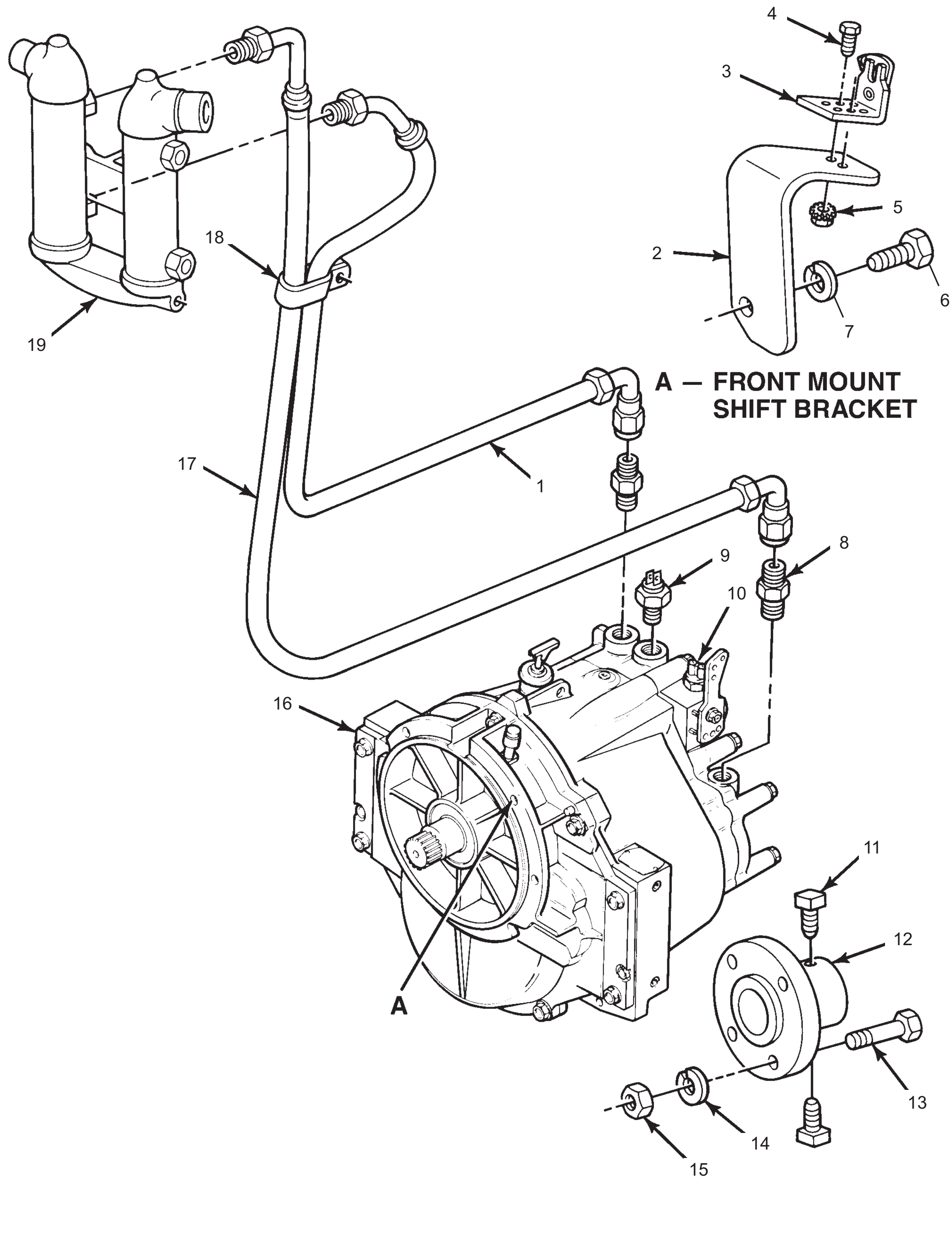
TRANSMISSION AND RELATED COMPONENTS ('04) (VELVET DRIVE "V"-DRIVE) - FIGURE 31



TRANSMISSION AND RELATED COMPONENTS (‘04) (VELVET DRIVE “V”-DRIVE) - FIGURE 31

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	RS2055	**Nut**, attaching bolt	2
2	96341	**Shift Bracket** (front mount)	1
3	R090086	**Cable Clip**, single cable	1
3	22232	**Cable Clip**, dual cable clip (not shown)	OPT
4	RS5122	**Bolt**, clip attaching (1/2”)	2
5	18201	**Hose Assembly**, transmission to cooler	1
6	R024008	**Elbow**, hose - transmission (90 degree)	1
7	RS4674	**Nipple**, pipe (3”)	1
8	R020037	**Sender**, temperature alarm	1
9	R153002	**Switch Kit**, neutral start (not shown)	1
N.I.	25542	**Switch & O-Ring Assembly** (not shown)	1
10	R024010	**Elbow**, hose - transmission (90 degree)	1
11	RS1529	**Nut**, coupling bolt	4
12	RS2181	**Lockwasher**, coupling bolt	4
13	22136	**Bolt**, coupling (1 1/2”)	4
14	R148001	**Coupler**, prop shaft (1” shaft)	OPT
14	R148002	**Coupler**, prop shaft (1 1/8” shaft)	OPT
14	R148003	**Coupler**, prop shaft (1 1/4” shaft)	OPT
14	R148004	**Coupler**, prop shaft (1 3/8” shaft)	OPT
14	R148005	**Coupler**, prop shaft (1 1/2” shaft)	OPT
14	R148007	**Coupler**, prop shaft (1 3/4” shaft)	OPT
14	R148008	**Coupler**, prop shaft (2” shaft)	OPT
15	2000090	**Screw**, set - coupler	2
16	RA156002B	**Transmission** (1.51:1 Reduction)	1
16	RA156002D	**Transmission** (1.99:1 Reduction)	1
16	RA156002E	**Transmission** (2.49:1 Reduction)	1
17	18201	**Hose Assembly**, cooler to transmission	1
18	R024010	**Fitting,** 90 degree	2
19	R147006	**Cooler Assembly**, transmission oil	1
20	RS1028	**Nut**, cooler bracket attaching	1
21	RS2180	**Lockwasher**, cooler bracket attaching	1
22	RS0256	**Bolt**, cooler bracket attaching	1
23	RS0302	**Bolt**, cooler bracket attaching	1
24	R090010	**Bracket**, transmission cooler mounting	1
25	RS2058	**Nut**, cooler bracket attaching	1
26	R090304	**Bracket**, transmission cooler attaching	1
27	RS2180	**Lockwasher**, cooler bracket mounting	1
28	RS0316	**Bolt**, cooler bracket mounting (exhaust manifold bolt)	1

TRANSMISSION AND RELATED COMPONENTS (Thru ‘03) (VELVET DRIVE 5000) - FIGURE 32

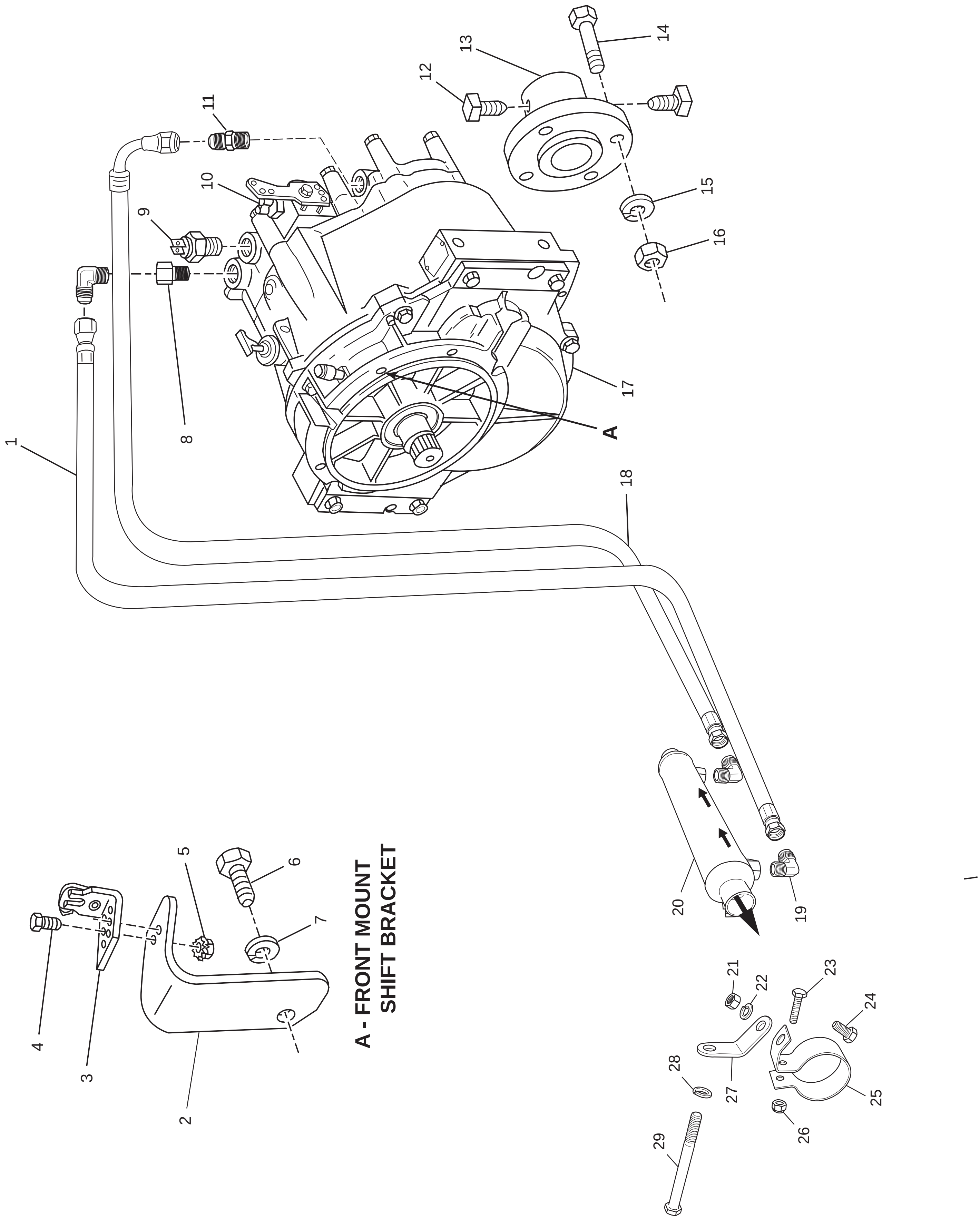


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TRANSMISSION AND RELATED COMPONENTS (Thru ‘03) (VELVET DRIVE 5000) - FIGURE 32

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	18201	**Hose Assembly**, transmission to cooler	1
2	98227	**Shift Bracket**, (front entry)	1
3	R090086	**Cable Clip**, single cable	1
3	22232	**Cable Clip**, dual cable clip (not shown)	OPT
4	RS5122	**Bolt**, clip attaching (1/2”)	2
5	RS2055	**Nut**, attaching bolt	2
6	RS0329	**Bolt**, shift bracket attaching	2
7	RS2180	**Washer**, shift bracket attaching bolt	2
8	30603	**Fitting**, adapter	1
9	R020037	**Sender**, temperature alarm	1
10	25542	**Switch & O-Ring Assembly** (not shown)	1
11	2000090	**Screw**, set - coupler	2
12	R148001	**Coupler**, prop shaft (1” shaft)	OPT
12	R148002	**Coupler**, prop shaft (1 1/8” shaft)	OPT
12	R148003	**Coupler**, prop shaft (1 1/4” shaft)	OPT
12	R148004	**Coupler**, prop shaft (1 3/8” shaft)	OPT
12	R148005	**Coupler**, prop shaft (1 1/2” shaft)	OPT
12	R148007	**Coupler**, prop shaft (1 3/4” shaft)	OPT
12	R148008	**Coupler**, prop shaft (2” shaft)	OPT
13	22136	**Bolt**, coupling (1 1/2”)	4
14	RS2181	**Lockwasher**, coupling bolt	4
15	RS1529	**Nut**, coupling bolt	4
16	RA157020B	**Transmission** (1.50:1 Reduction) Down Angle	1
16	RA157020C	**Transmission** (2:1 Reduction) Down Angle	1
16	RA157020D	**Transmission** (2.45:1 Reduction) Down Angle	1
16	RA157020E	**Transmission** (2.80:1 Reduction) Down Angle	1
16	RA156008	**Transmission** (1.25:1 Reduction) V-Drive	1
16	RA156008A	**Transmission** (1.50:1 Reduction) V-Drive	1
16	RA156008B	**Transmission** (2:1 Reduction) V-Drive	1
16	RA156008C	**Transmission** (2.50:1 Reduction) V-Drive	1
17	18200	**Hose Assembly**, cooler to transmission	1
18	R127099	**Clamp,** strap	1
19	98570	**U-Cooler Assembly**, transmission and engine oil	1

TRANSMISSION AND RELATED COMPONENTS (‘04) (VELVET DRIVE 5000) - FIGURE 33

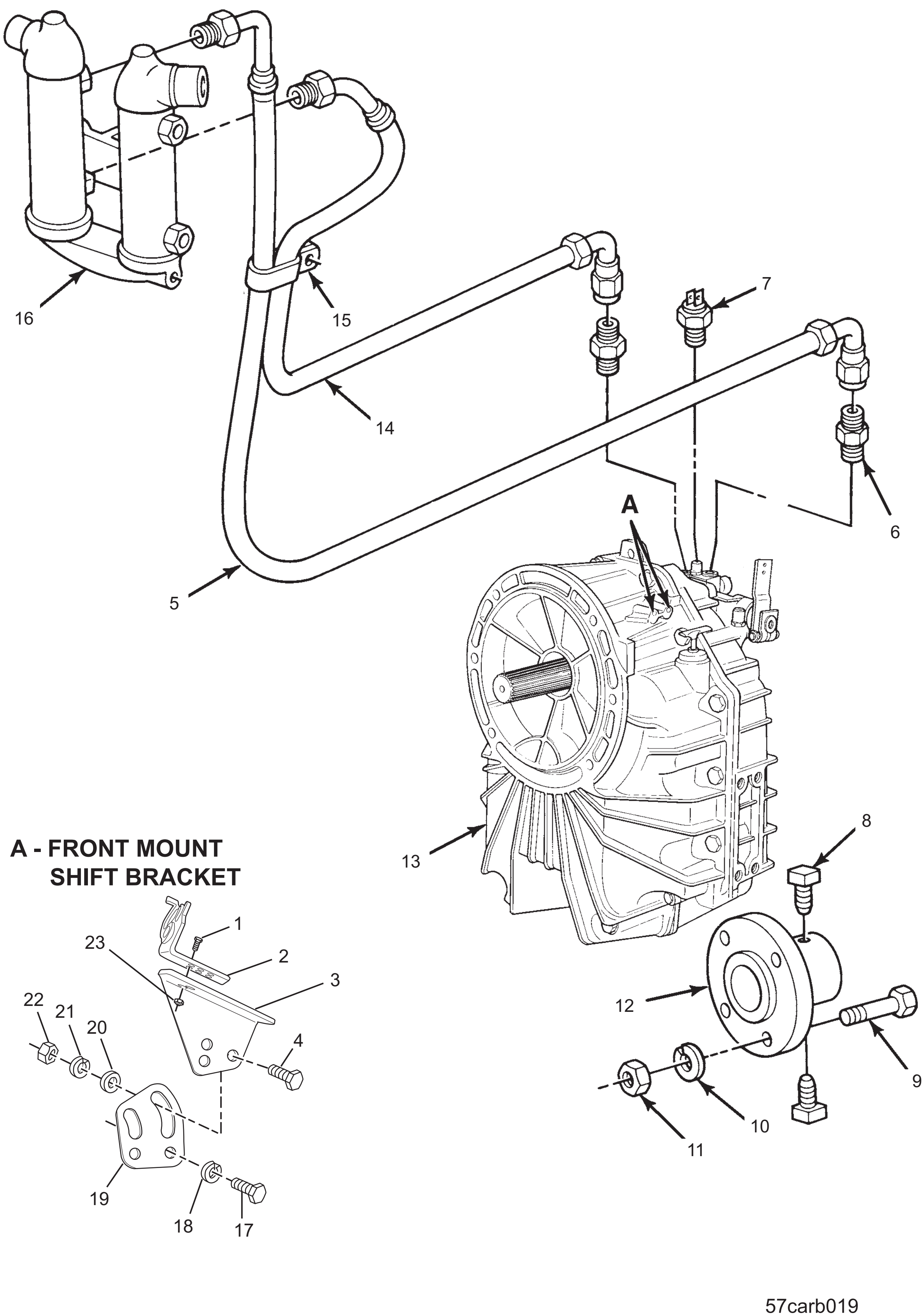


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TRANSMISSION AND RELATED COMPONENTS (‘04) (VELVET DRIVE 5000) - FIGURE 33

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	18201	**Hose Assembly**, transmission to cooler	1
2	98227	**Shift Bracket**, (front entry)	1
3	R090086	**Cable Clip**, single cable	1
3	22232	**Cable Clip**, dual cable clip (not shown)	OPT
4	RS5122	**Bolt**, clip attaching (1/2”)	2
5	RS2055	**Nut**, attaching bolt	2
6	RS0329	**Bolt**, shift bracket attaching	2
7	RS2180	**Washer**, shift bracket attaching bolt	2
8	R024196	**Fitting**, adapter	1
9	R020037	**Sender**, temperature alarm	1
10	25542	**Switch & O-Ring Assembly** (not shown)	1
11	30603	**Fitting**, adapter	1
12	2000090	**Screw**, set - coupler	2
13	R148001	**Coupler**, prop shaft (1” shaft)	OPT
13	R148002	**Coupler**, prop shaft (1 1/8” shaft)	OPT
13	R148003	**Coupler**, prop shaft (1 1/4” shaft)	OPT
13	R148004	**Coupler**, prop shaft (1 3/8” shaft)	OPT
13	R148005	**Coupler**, prop shaft (1 1/2” shaft)	OPT
13	R148007	**Coupler**, prop shaft (1 3/4” shaft)	OPT
13	R148008	**Coupler**, prop shaft (2” shaft)	OPT
14	22136	**Bolt**, coupling (1 1/2”)	4
15	RS2181	**Lockwasher**, coupling bolt	4
16	RS1529	**Nut**, coupling bolt	4
17	RA157020B	**Transmission** (1.50:1 Reduction) Down Angle	1
17	RA157020C	**Transmission** (2:1 Reduction) Down Angle	1
17	RA157020D	**Transmission** (2.45:1 Reduction) Down Angle	1
17	RA157020E	**Transmission** (2.80:1 Reduction) Down Angle	1
17	RA156008	**Transmission** (1.25:1 Reduction) V-Drive	1
17	RA156008A	**Transmission** (1.50:1 Reduction) V-Drive	1
17	RA156008B	**Transmission** (2:1 Reduction) V-Drive	1
17	RA156008C	**Transmission** (2.50:1 Reduction) V-Drive	1
18	18200	**Hose Assembly**, cooler to transmission	1
19	R024010	**Fitting,** 90 degree	2
20	R147006	**Cooler Assembly**, transmission oil	1
21	RS1028	**Nut**, cooler bracket attaching	1
22	RS2180	**Lockwasher**, cooler bracket attaching	1
23	RS0256	**Bolt**, cooler bracket attaching	1
24	RS0302	**Bolt**, cooler bracket attaching	1
25	R090010	**Bracket**, transmission cooler mounting	1
26	RS2058	**Nut**, cooler bracket attaching	1
27	R090304	**Bracket**, transmission cooler attaching	1
28	RS2180	**Lockwasher**, cooler bracket mounting	1
29	RS0316	**Bolt**, cooler bracket mounting (exhaust manifold bolt)	1

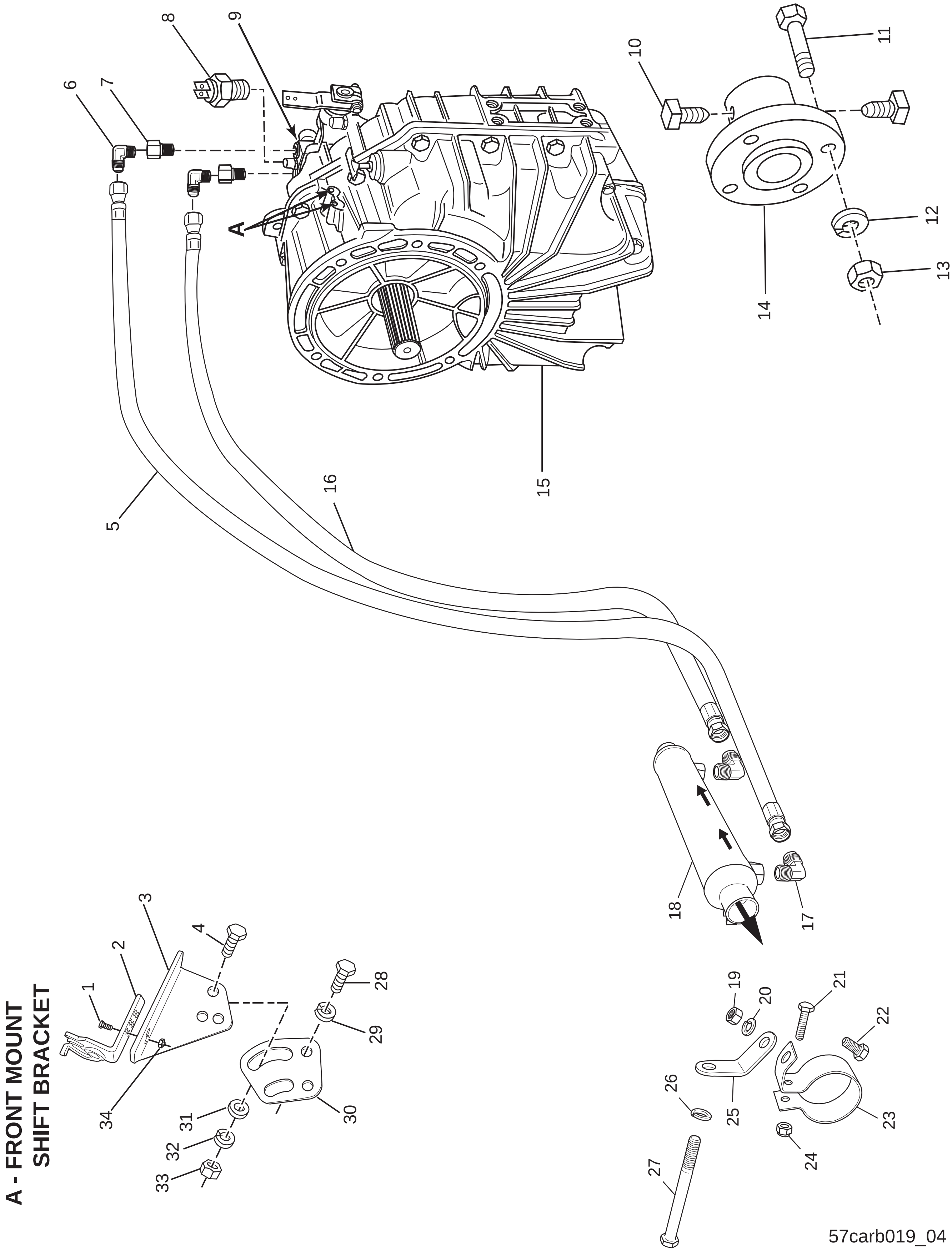
TRANSMISSION AND RELATED COMPONENTS (Thru '03) (HURTH GEAR) - FIGURE 34



TRANSMISSION AND RELATED COMPONENTS (Thru ‘03) (HURTH GEAR) - FIGURE 34

ITEM	PART NUMBER	DESCRIPTION		QUANTITY
1	RS5122	**Bolt**, cable clip attaching		2
2	R090086	**Cable Clip**, single cable		1
2	22232	**Cable Clip**, dual cable clip (not shown)		OPT
3	R090202	**Shift Bracket**, cable clip attaching		1
4	RS0282	**Bolt**, shift bracket attaching		2
5	18200	**Hose Assembly**, transmission to cooler		1
6	30603	**Fitting**, adapter		2
7	R020037	**Sender**, temperature alarm		1
N.I.	25542	**Switch & O-Ring Assembly** (not shown)		1
8	2000090	**Screw**, set - coupler		2
9	90418138	**Bolt**, coupling (1 3/8”)		4
10	RS2181	**Lockwasher**, coupling bolt		4
11	RS1529	**Nut**, coupling bolt		4
12	R148001	**Coupler**, prop shaft (1” shaft)		OPT
12	R148002	**Coupler**, prop shaft (1 1/8” shaft)		OPT
12	R148003	**Coupler**, prop shaft (1 1/4” shaft)		OPT
12	R148004	**Coupler**, prop shaft (1 3/8” shaft)		OPT
12	R148005	**Coupler**, prop shaft (1 1/2” shaft)		OPT
12	R148007	**Coupler**, prop shaft (1 3/4” shaft)		OPT
12	R148008	**Coupler**, prop shaft (2” shaft)		OPT
13	RA157022	**Transmission 630A** (1.22:1 Reduction)		1
13	RA157022A	**Transmission 630A** (1.55:1 Reduction)		1
13	RA157022B	**Transmission 630A** (2.00:1 Reduction)	8° Down	1
13	RA157022C	**Transmission 630A** (2.50:1 Reduction)	Angle	1
13	RA157022D	**Transmission 630A** (2.70:1 Reduction)		1
13	RA157023F	**Transmission 800A** (2.85:1 Reduction)		1
13	RA156009	**Transmission 630V** (1.29:1 Reduction)		1
13	RA156009A	**Transmission 630V** (1.50:1 Reduction)	V-Drive	1
13	RA156009B	**Transmission 630V** (2.00:1 Reduction)		1
13	RA156009C	**Transmission 630V** (2.50:1 Reduction)		1
14	18201	**Hose Assembly**, cooler to transmission		1
15	R127099	**Clamp,** strap		1
16	R147035	**U-Cooler Assembly**, transmission and engine oil		1
17	RS6529	**Bolt**, shift bracket attaching		2
18	93930000	**Lockwasher**, shift bracket attaching bolt		2
19	R090235	**Bracket**, shift		1
20	RS2674	**Washer**, shift bracket attaching bolt		2
21	RS2179	**Lockwasher**, attaching bolt		2
22	RS1027	**Nut**, shift bracket attaching bolt		2
23	RS2055	**Nut**, cable clip attaching bolt		2

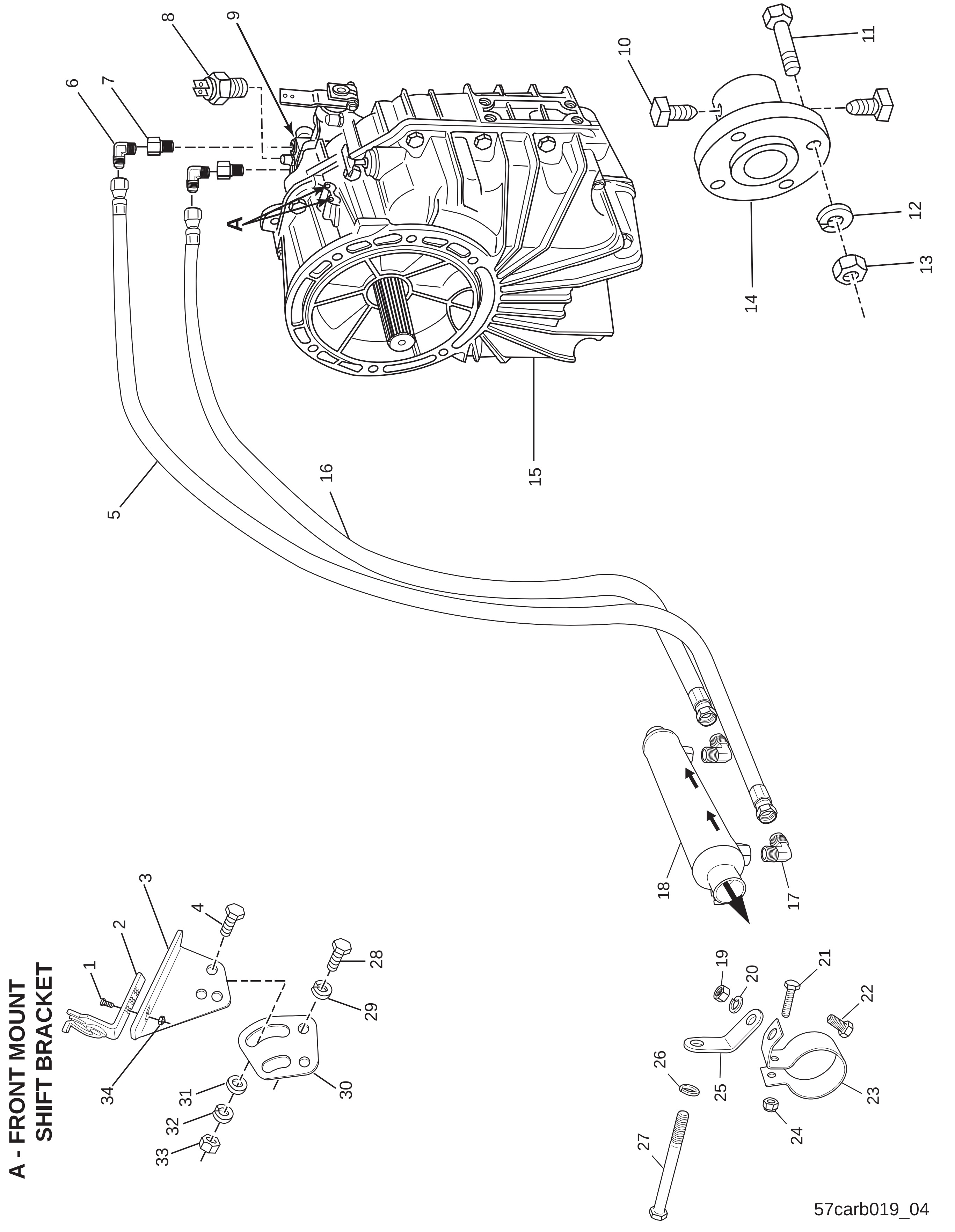
TRANSMISSION AND RELATED COMPONENTS (‘04) (HURTH GEAR) - FIGURE 35



TRANSMISSION AND RELATED COMPONENTS (‘04) (HURTH GEAR) - FIGURE 35

ITEM	PART NUMBER	DESCRIPTION		QUANTITY
1	RS5122	**Bolt**, cable clip attaching		2
2	R090086	**Cable Clip**, single cable		1
2	22232	**Cable Clip**, dual cable clip (not shown)		OPT
3	R090202	**Shift Bracket**, cable clip attaching		1
4	RS0282	**Bolt**, shift bracket attaching		2
5	RA045007N	**Hose Assembly**, transmission to cooler		1
6	R024010	**Fitting**, 90 degree		2
7	R024196	**Fitting**, adapter		2
8	R020037	**Sender**, temperature alarm		1
9	25542	**Switch & O-Ring Assembly** (not shown)		1
10	2000090	**Screw**, set - coupler		2
11	90418138	**Bolt**, coupling (1 3/8”)		4
12	RS2181	**Lockwasher**, coupling bolt		4
13	RS1529	**Nut**, coupling bolt		4
14	R148001	**Coupler**, prop shaft (1” shaft)		OPT
14	R148002	**Coupler**, prop shaft (1 1/8” shaft)		OPT
14	R148003	**Coupler**, prop shaft (1 1/4” shaft)		OPT
14	R148004	**Coupler**, prop shaft (1 3/8” shaft)		OPT
14	R148005	**Coupler**, prop shaft (1 1/2” shaft)		OPT
14	R148007	**Coupler**, prop shaft (1 3/4” shaft)		OPT
14	R148008	**Coupler**, prop shaft (2” shaft)		OPT
15	RA157022	**Transmission 630A** (1.22:1 Reduction)		1
15	RA157022A	**Transmission 630A** (1.55:1 Reduction)		1
15	RA157022B	**Transmission 630A** (2.00:1 Reduction)	8° Down	1
15	RA157022C	**Transmission 630A** (2.50:1 Reduction)	Angle	1
15	RA157022D	**Transmission 630A** (2.70:1 Reduction)		1
15	RA157023F	**Transmission 800A** (2.85:1 Reduction)		1
15	RA156009	**Transmission 630V** (1.29:1 Reduction)		1
15	RA156009A	**Transmission 630V** (1.50:1 Reduction)	V-Drive	1
15	RA156009B	**Transmission 630V** (2.00:1 Reduction)		1
15	RA156009C	**Transmission 630V** (2.50:1 Reduction)		1
16	RA045007T	**Hose Assembly**, cooler to transmission		1
17	R024010	**Fitting,** 90 degree		2
18	R147006	**Cooler Assembly**, transmission oil		1
19	RS1028	**Nut**, cooler bracket attaching		1
20	RS2180	**Lockwasher**, cooler bracket attaching		1

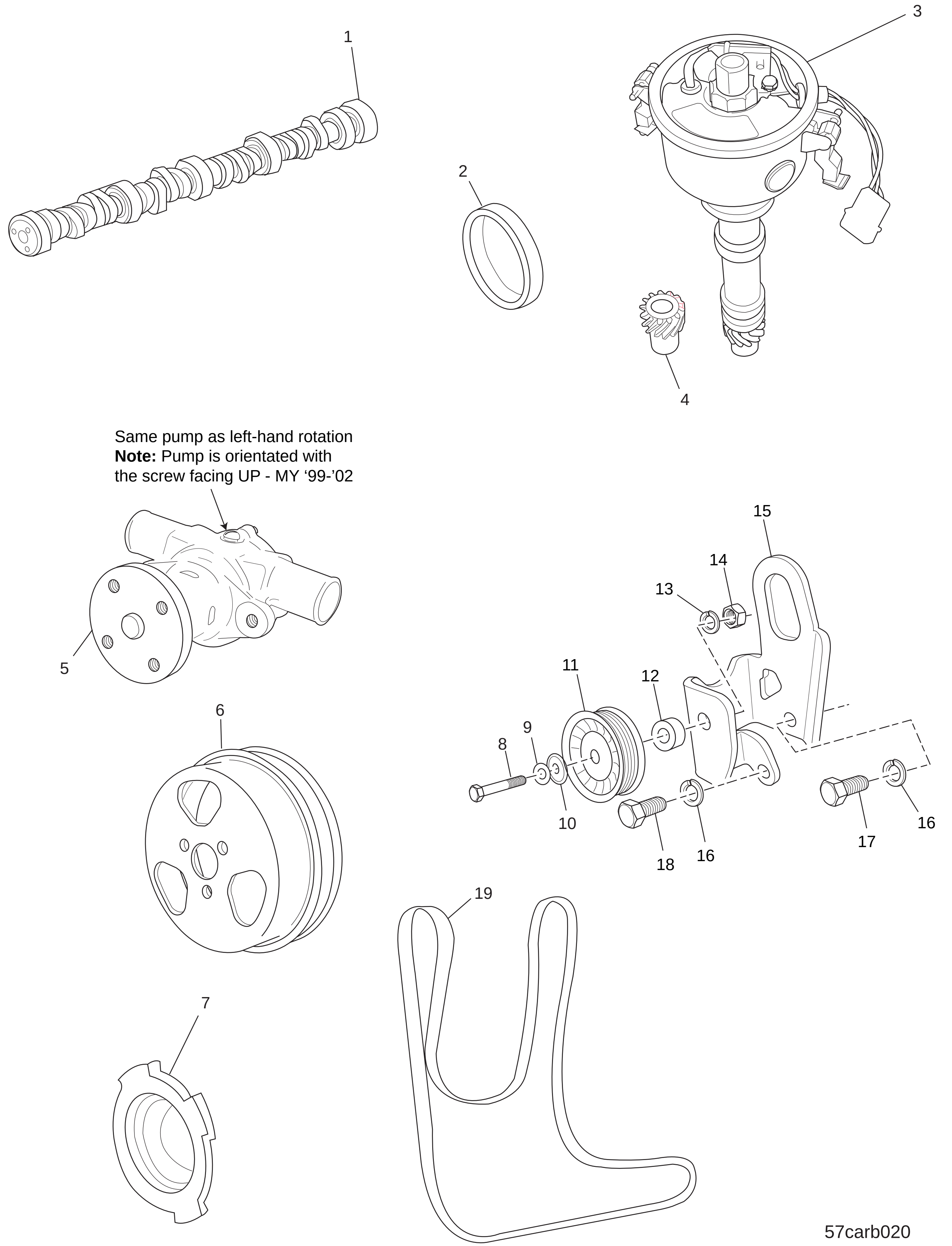
TRANSMISSION AND RELATED COMPONENTS (‘04) (HURTH GEAR) - FIGURE 35(cont’d)



TRANSMISSION AND RELATED COMPONENTS (‘04) (HURTH GEAR) - FIGURE 35 (cont’d)

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
21	RS0256	**Bolt**, cooler bracket attaching	1
22	RS0302	**Bolt**, cooler bracket attaching	1
23	R090010	**Bracket**, transmission cooler mounting	1
24	RS2058	**Nut**, cooler bracket attaching	1
25	R090304	**Bracket**, transmission cooler attaching	1
26	RS2180	**Lockwasher**, cooler bracket mounting	1
27	RS0316	**Bolt**, cooler bracket mounting (exhaust manifold bolt)	1
28	RS6531	**Bolt**, shift bracket attaching	2
29	93930000	**Lockwasher**, shift bracket attaching bolt	2
30	R090235	**Bracket**, shift	1
31	RS2674	**Washer**, shift bracket attaching bolt	2
32	RS2179	**Lockwasher**, attaching bolt	2
33	RS1027	**Nut**, shift bracket attaching bolt	2
34	RS2055	**Nut**, cable clip attaching bolt	2
NI	RP077011	**Kit,** transmission oil filter (ZF)	AR

RIGHT HAND ROTATION ENGINE COMPONENTS - FIGURE 36



RIGHT HAND ROTATION ENGINE COMPONENTS - FIGURE 36

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
*	RB001005A	**Base Engine Assembly (RH)**	1
1	RA050022	**Camshaft**, engine **(RH)**	1
2	R047175	**Seal**, crankshaft rear oil **(RH)**	1
3	RA107042	**Distributor Assembly (RH)**	1
4	TBD	**Gear**, right hand (Dist. # RA107042)	1
5	RA057031	**Raw Water Pump Assembly** (SEE NOTE)	1
6	R065052A	**Pulley**, raw water pump **(RH), ‘04**	1
7	R056001A	**Ring,** Crankshaft Position Sensor Reluctor **(RH)**	1
8	98443050	**Bolt**, Idler Pulley attaching	1
9	92940000	**Flat Washer**, Idler Pulley attaching	1
10	R096145	**Flat Washer**, Idler Pulley attaching	1
11	R065054	**Pulley**, Idler	1
12	R062083	**Spacer**, Idler Pulley	1
13	93940000	**Lock Washer**, Idler Pulley attaching	1
14	L00908	**Nut**, Idler Pulley attaching	1
15	R090307	**Bracket**, Idler pulley 5.7 **(RH)**	1
16	RS2180	**Lock Washer**, Idler bracket attaching	2
17	RS0304	**Bolt**, Idler bracket attaching, upper	1
18	RS0306	**Bolt**, Idler bracket attaching,lower	1
19	R066029A	**Belt**, serpentine drive, 5.7L **(RH)**	1